iEiMobile®

# 2012 Catalogue v.3

Stay Connected, Stay Informed, Stay Ahead

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# IEIMobile®

## A Professional Mobile Solution Provider

## About IEIMobile

IEIMobile was established as an independent business unit by IEI Technology and the ICP group. We are a professional mobile solution provider seeking to revolutionize the way people work. Our goal is to provide our customers with reliable, affordable and ready-to-use mobile devices by developing mobile industrial products with the most advanced communications and easy-to-use mobile applications.

Our comprehensive product portfolio includes tablet PCs, industrial PDAs and in-vehicle (automotive) computing devices. We serve the needs of a wide range of industries such as retail, logistics, healthcare, construction, manufacturing, transportation and hospitality. By integrating design and innovation technologies with exceptionally-made mobile devices and manufacturing know-how, IEIMobile offers a superior production model for clients requiring design, engineering and Original Design Manufacturing (ODM) services.

At the heart of our designs is a celebration of the true spirit of mobile technology – the idea that businesses should be empowered to operate with greater autonomy, efficiency and imagination. More value-added features can be customized and integrated by using our products as a service-oriented wireless platform. IEIMobile is here to help businesses realize their full potential.

## Our Roots, Our History: Industry Insight and Expertise

For the first time in 2004, one out of every six people was connected wirelessly anywhere, anytime, enabling people around the world to expand their personal relations into powerful networks and unparalleled business opportunities. As a leading industrial computer solution provider, IEI Technology recognized this record breaking event as a defining trend towards mobile computing in the industrial sector that will be met with explosive growth as mobile communication in the consumer market reaches maturity.

Instead of evolving and expanding organically in response to new market demands, and being limited by the scope of existing product lines and services, IEI Technology sought to utilize its extensive industry experience and indisputable expertise by creating an independent business unit - IEIMobile.

Being rooted in IEI Technology and the ICP Group, we are blessed with years of industry insight and expertise. Through our ability to identify market opportunities and trends, as well as develop affordable, high quality devices, IEIMobile focuses on creating a valued brand worldwide.

## Partner for Growth

To seize opportunities in the fast-growing mobile computing market, IEIMobile, part of IEI Technology and the ICP Group, seeks partners that deliver both a competitive advantage and a bottom-line impact to our clients. We approach collaborative relationships with the same passion and commitment that we invest in our client relationships. Building on a legacy of quality and industry leadership, we offer opportunities for new venture creation as well as professional ODM services to meet individual client needs.

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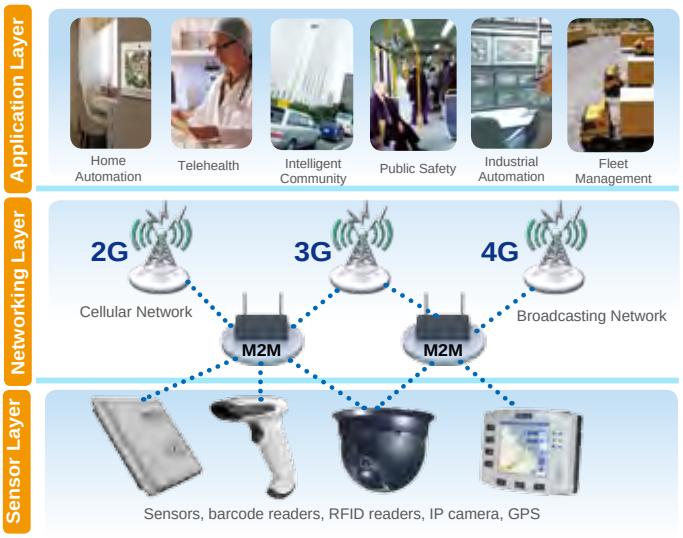
# The Internet of Things

By definition, “The Internet of Things” is literally having every “thing” connected in a vast, gigantic network, consisting of three layers: sensor layer, network layer, application layer.

What makes the IOT feasible is the world’s advancement in data capture and wireless technologies. Adoption of data capture technologies have seen a stable growth in the market during the past few years. Wireless technologies on the other hand, which is the cornerstone of turning captured information into business intelligence, has undergone many innovative developments. Amongst these, Wi-Fi and mobile broadband technologies are the most popular for mobile applications.




## Wi-Fi

Commonly known by its trademark name “Wi-Fi”, the range of products using the IEEE 802.11 family of standards allows electronic devices to exchange data wirelessly over a computer network. A device with Wi-Fi functions, such as a laptop, smartphone, or tablet pc, can connect to a network resource such as the Internet through a wireless network access point.
Although Wi-Fi has become a popular option for connecting industrial devices, the issues that face mobile industrial applications are quite different from the issues encountered in a typical commercialized application. Industrial application requires greater energy efficiency and undisrupted Wi-Fi connection to ensure optimal business operation. To meet these requirements, IEIMobile’s Wi-Fi enabled devices provides the following:
Power saving mode while the device is on suspend and Wi-Fi communication is in idle.
Auto connection to exiting wireless LAN.
Seamless wireless roaming and auto-switching.

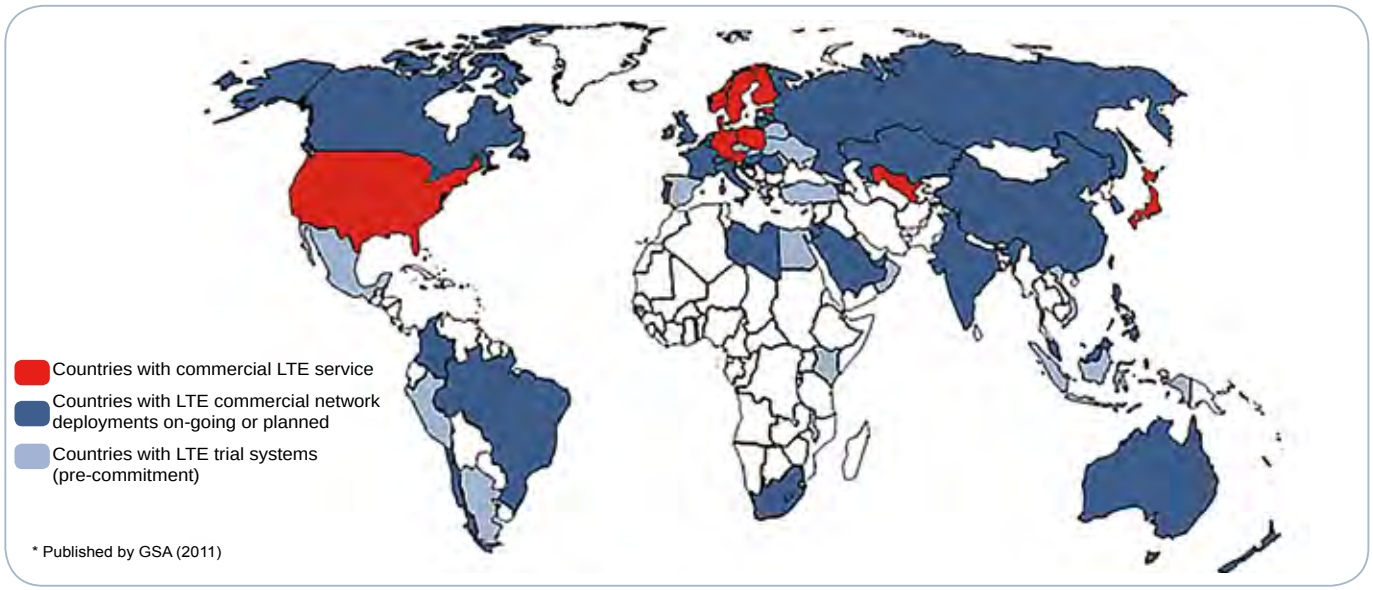
## Mobile Broadband

Mobile broadband refers to high-speed wireless internet access through a portable modem. Traditional broadband services utilize cable modem, DSL, which are wired to buildings, greatly limits the mobility of internet access. By contrast, mobile broadband that utilizes cellular networks for wireless access. 3G and 4G are the most common in use today.

Since 2003, cellular providers have been rolling out 3G networks with improved data download and upload speeds. With the rapid evolution of wireless technology, the 4th Generation (4G) wireless network was first introduced in 2010 and is expected to be the successor of previous 2G and 3G networks. Currently,the Long Term Evolution (LTE) is the 4G network being deployed worldwide.

| 3G Lte | Data Rate | |
|---|---|---|
| | 3G | 4G |
| High Mobility Communication (moving vehicle) | 384 kbit/s | 100 Mbit/s |
| Low Mobility Communication (walking / stationary) | 2Mbit/s | 1 Gbit/s |

## 180 operators in 70 countries investing in LTE


Countries with commercial LTE service
Countries with LTE commercial network deployments on-going or planned
Countries with LTE trial systems (pre-commitment)
* Published by GSA (2011)

# Mobile Wireless Technology Trends

Wireless technologies play an important role in the Internet of Things (IOT). The demand for mobility and automation has caused breakthrough innovations that will change the market and the world's infrastructure. Currently, two definitive trends in the wireless industry can be seen

## My Wi-Fi (MiFi)

A mobile Wi-Fi hotspot device is called a MiFi Hotspot. It turns 3G signals from a SIM card into Wi-Fi signals and creates a personal Wi-Fi hotspot. This means that users can connect up to five different Wi-Fi enabled devices to the internet at once.

Compared to the alternative mobile broadband connectivity for wireless communication, it is a more cost-efficient options. Advantages include:

1.Connect multiple devices
2.Choice of carriers – including regional carriers
3.Potential discount if added to an existing service plan (depends on carrier)
4.Optional 4G connection (depends on carrier)
5.Potential for contract-free/prepaid service which is beneficial if service is not needed all the time
6.Ease of upgrade from 3G

## Municipal Wireless Network (Muni-Fi)

Muni-Fi is the concept of turning an entire city into a wireless access zone, giving rise to the "wireless city". It requires the deployment of hundreds to thousands of hotspots in the city and allows Wi-Fi enabled devices to make connections automatically. Earlier initiatives charged users for access. As wireless becomes increasingly ubiquitous, users can expect free access to Wi-Fi hotspots regardless of location as governments worldwide are engaged in related developments already.

## IEIMobile Applications

The Internet of Things (IOT) holds an enormous amount of opportunity and value for the industry. Having information available anytime anywhere can enhance the decision making process, increase information accuracy, and decrease costs associated with traditional business practices:
As Wi-Fi technology and infrastructure become increasingly ubiquitous and mature, the adoption of mobile devices with Wi-Fi connections will be a standard. With built-in Wi-Fi modules and internal antennas, IEIMobile's devices can connect to Wi-Fi hotspots (MiFi, Muni-Fi) and enable information obtained by mobile field workers to be transferred to the back end office.
However, in situations where Wi-Fi hotspots (MiFi, Muni-Fi) are unavailable, mobile broadband modems can be used to access wireless communication. IEIMobile's devices integrated with mobile broadband modules (such as 3G) offer fast, powerful, and stable wireless connections for users on the move.

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# Our Dedicated Product Lines

## Tablet PC

### ICE Series -
### Your cutting-edge digital assistant

With a focus on ergonomic design and features, the ICE series tablet PC offers versatility in application and field-proven durability.

The ICE Series tablet PC features exceptional ergonomics, industrial sealing and high drop resistance for withstanding the most extreme industry-specific environment. Our obsessive attention to detail and passion for quality create a winning formula that promises to delight and inspire your staff on-the-go. It is the ultimate productivity tool for field services.

## Industrial PDA (EDA)

### Modat Series -
### Your data manager on the go

The Modat series industrial PDA (EDA) brings real-time mobile computing and cost-effective mobility in one customizable, robust package.

The next generation of industrial PDA (EDA), the Modat Series, provides a total wireless solution with Windows® Embedded Handheld or Android operating system. The Modat Series industrial PDA features a full range of wireless communication options and optimal suites of data capture technologies in one lightweight, versatile and robust package. It is specially suited to solutions in the retail, hospitality and logistics environment.

## Automotive PC

### Automotive PC Series -
### Your reliable companion on the road

Raising the bar for premier in-vehicle infotainment systems, the automotive PC series optimizes user comfort and the power of sophisticated navigation technologies for your mobile work fleet.

The automotive PC series is a CAN-bus integrated mobile computing device that promises to answer all your field force automation needs. Empowered by the latest and most advanced navigation technologies available, your fleet operation is secured and optimized at minimal cost.

# Tablet PC





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# Tablet PC

## The Coming of a New Age

At the mention of the 'Tablet PC', one cannot help but form images of Apple's iPad and its flawless touch screen features in their minds. The success of this fancy computing object, released in April 2010, was made possible by a combination of technological innovations and marketing expertise. With sales totaling 15 million in 2010, the iPad is symbolic of the coming of a new age. Indeed, over 80 new tablets were announced to compete with the iPad in early 2011 – the year of the tablet PC.

For the few that have yet to catch up with technological advancements, a tablet PC is a medium-sized computer in a slate enclosure without a keyboard or a mouse. It features a touch screen display that utilizes a stylus, digital pen, or fingertip as the primary input method. This concept of mobile computing is nothing new. Microsoft® and others developed their version of the tablet PC in the 90s, but were often criticized to be underpowered, bulky, and plagued by inefficient use of stylus or digital pen.

Along with the stable growth of tablet PCs in the consumer market, R&D breakthroughs have continuously resolved problems encountered by past designs and ensured the usability of such devices. Nowadays, a low power consumption fan-less CPU provides better system reliability; the availability of lightweight embedded OS greatly enhances computing power; the development of sophisticated touch-screen technology offers a more intuitive way of working with computers; and the penetration and integration of wireless technology makes communication effortless. In addition, due to its mobility, ease of use, and wide applications, the tablet PC is becoming and will be the most natural adoption for the enterprise sectors.

For example, in the healthcare industry, getting the right information at the right time can often mean the difference between life and death. It is imperative for clinicians to receive the most up-to-the-minute information throughout all stages of the care delivery process. The mobility of the tablet PC not only improves the accuracy of patient data entry, it also offers quick access to complete patient data and reference materials at point-of-care. The result is safer, more efficient and higher quality patient care.

In the construction industry where workers are accustomed to computing while standing or walking, a full function tablet PC combined with rugged durability greatly increases productivity and reduces risks. It allows for real time data capture and verification of inspections, punch lists, and schedule updates while keeping projects on time and within budget. Engineers can access and mark-up plans and drawings from anywhere in the field, enabling faster decision-making and up-to-date information gathering. Job site safety is constantly monitored, minimizing litigation risks.

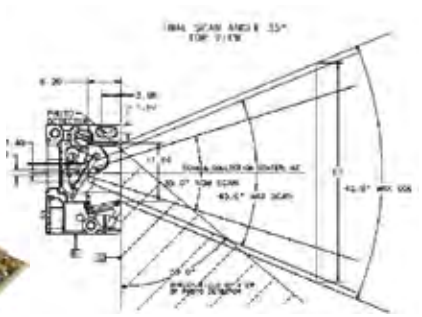
For sales representatives expected to work from anywhere, a tablet PC offers more than just a way to create and deliver engaging presentations. It allows the user to maintain and access accurate customer information on the road, complete contracts, upload orders remotely, and track asset transfers instantly. By using a tablet PC to automate forms and file sales reports, salespeople no longer need to re-key data back in the office.

IEIMobile believes the tablet PC will inspire unfathomable innovations and we are here to provide a platform where industries can explore unlimited opportunities.

# IEIMobile for Automatic Identification and Data Capture (AIDC)

Equipped with leading barcode and RFID reading technologies, IEIMobile's extensive product portfolio offers solutions across a broad range of application areas.
**Barcode Reading**: **The successful adoption of technology involves more than choosing the right fit. IEIMobile has rich experiences in resolving related design and system integration issues such as:**

- Power Management
- Housing and Optical Design
- Wavefront Distortion
- Exit Window Materials
- Laser and Collection Clear Aperture
- Abrasion Resistance and Anti-Reflection (AR) Coatings
- Exit Windows Distance, Angle, and Decode Zone
- Pitch, Skew, Roll, Bi-Directional, and Omni-Directional
- Aggressive Decoding Algorithms



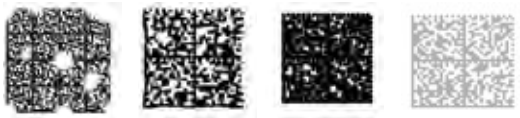
*IEIMobile adopts the leading barcode brand*

Intermec
Honeywell
Symbol

In addition, IEIMobile's bundled Software Development Kit (SDK) provides a user manual, demo source codes, and an easy-to use API to control barcode reader performance in areas such as:

- Data Baud Rate
- Transmission Speed
- Trigger Mode
- Data Options, Prefix and Suffix Values
- Beeper Settings
- Laser Beam Options
- LED On/Off
- Power Mode Settings
- Enable or Disable Symbology Decode Support

*The leading barcode engine provides the best decoding technology.*



**Damaged** | **Non linear distortion** | **Overburn** | **Low contrast**

# 1D/2D Barcode

Barcoding is a mature technology that has been around since the 1960s. Almost all fields of business today use barcoding to identify and track commodities, allowing for a more automated business process that reduces human error and increases productivity. It is widely accepted because of the low cost of barcode labels and internationally established standards such as UPC (Universal Product Code) for grocery items, ISBN for books, and ISSN for periodicals that facilitate unique product identification. Barcodes, therefore, have become unique and universal and can be recognized anywhere in the world.

Barcodes are read by barcode scanners using optical laser or imaging software technology. Linear or 1D barcodes are a series of parallel vertical lines, while 2D matrix codes come in patterns of dots, squares, and other geometric patterns. 2D barcodes typically stores more data than 1D barcodes. Since information on barcodes cannot be updated and require a direct line-of-sight between the code and the reader in order to be read individually, its use has been replaced by RFID in industries where products are relatively complex and expensive such as the IT and the freight industry. However, barcoding can still find its place in retail point of sale environments, payment transactions, ownership transitions, or in applications which require decisions in material flow.

# RFID – Radio Frequency Identification

RFID (Radio Frequency Identification) is an automatic identification technology that uses radio waves to access digital data encoded in an RFID tag. Information is sent to and read from RFID tags by a reader using an attached antenna. An RFID reader is basically a radio frequency transmitter and receiver, controlled by a microprocessor or digital signal processor. Therefore, data can be captured simultaneously from many tags within range of the antenna regardless of their position and placement. With a single tag on each product item or pallet, every object can be automatically identified and tracked from factory to shelf without breaking any security sealing or tearing any packaging. RFID is ideal for work-in-process tracking, closed-loop asset management, and security and access control systems.

RFID tags are comprised of an integrated circuit (IC) with an attached antenna. Their sizes and forms are determined by the application requirements. Some of them can be as small as a grain of rice, making them ideal for theft prevention. Information is stored in the IC and transmitted through the antenna to a reader. Tags can be read-only or allow for both read and write function. In situations where a tagged item needs to be monitored, tracked and reviewed at every phase, a writable RFID tag allows for real-time information updates as it moves through the supply chain.

RFID





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# Applications

## Healthcare

Barcodes are traditionally used in medical environments to prevent medication and surgical errors during the patient-care process. Barcode technology can aid in dispensing and administrating medication and blood products, collecting and tracking specimen tests and x-rays as well as managing and locating medical files and equipments. On every incoming patient's wrist, there is a barcode that holds identity information, reasons for admittance, allergies and medication prescribed. The barcode is scanned to verify the patient's identity before medication is administered or before the patient undergoes a medical procedure.

In the medical field, the RFID technology helps to eliminate medical mistakes. For example, when a tissue or fluid sample is collected from a patient at a hospital, an RFID tag can be automatically tracked through various preparation stages, therefore reducing data entry errors or mishandling. A pathologist can then retrieve patient records directly from the tag to the computer screen to ensure accurate patient and sample identification.

## Logistics

It is in logistics warehousing that RFID technology offers the greatest potential for scalability and application development. International logistics giants such as FedEx, DHL and UPS are all actively involved in the experimentation and implementation of RFID technology to streamline operations and optimize performance. Storage management systems, automatic data acquisition, and real-time asset tracking are among the many RFID applications that benefit businesses today.

## Retail

Wal-Mart, Zara and other leading retailers were among the first to apply RFID technology to inventory management. Reduced labor cost is one immediate value brought by RFID implementation, as merchandize is recorded and tracked automatically, eliminating the need for human handling. Out-of-stock is decreased and overstock is prevented through improved visibility from RFID-enabled distribution systems. Not only can retailers keep more items on stock, they can also greatly improve shelf availability, leading to more sales and improved revenue.

### Self-service

- Allow customer to check price, obtain product related information or even motivate them by providing promotional information

### Customer Loyalty Program

- Customers can access their loyalty card to see their accumulated credit and reward programs

### Advertising

- Play multimedia video to grab customers' attention and make shopping more interesting
- In DVD rental stores, customers can watch movie preview by scanning a DVD barcode

### Production Line Information

- Operator can scan barcodes on a WIP carrier to get production information and update production status

## Access Control

Compared with traditional access control systems, like barcode and magnetic stripe readers, RFID technology provides complete hands-free access to secured areas. People carrying packages, and those with disabilities, no longer have to struggle in front of the reader, trying to make closer contact. Hands-free access provides quick entry during inclement weather and makes attendance management more convenient. Electronic vehicle registration at car parks further ensures that only authorized personnel are admitted. Any unauthorized access can be recorded in real-time, triggering security to respond to an alert.

# Tablet PC

New

New

| Model | | ICEROCK | ICEFIRE | ICEFIRE 2 | ICECARE |
|---|---|---|---|---|---|
| Display | LCD Size | 8.0" TFT LCD | 10.4" TFT LCD | 10.4" TFT LCD | 7" TFT LCD |
| | Brightness (cd/m²) | 350 cd/m² | 350 cd/m² | 350 cd/m² | 500 cd/m² |
| | Max. Resolution | 800 x 600 pixels SVGA | 1024 x 768 pixels XGA | 1024 x 768 pixels XGA | 800 x 480 pixels WVGA |
| | Viewing Angle | 70/70/60/70 Deg. | 88/88/88/88 Deg. | 88/88/88/88 Deg. | 60/70/70/70 Deg. |
| | Touch Screen | 5-wire Resistive Type Touch | Resistive Supports Multi-touch and Gesture | Resistive Supports Multi-touch and Gesture | Projective Capacitive Touch |
| | Digitizer | N/A | 2048 levels @ full scale Pressure Resolution | 2048 levels @ full scale Pressure Resolution | N/A |
| System | CPU | Intel® Atom™ Z530 1.6GHZ | Intel® Atom™ D525 1.8GHz | Intel® Atom™ N2800 1.86GHz | TI Sitara AM3715 |
| | Chipset | Intel® SCH US15WP | Intel® ICH8M | Intel® NM10 | N/A |
| | Operating System | Microsoft® Windows XP Embedded | Microsoft® Windows Embedded Standard 7 P(WES7P) | Microsoft® Windows Embedded Standard 7 P(WES7P) | Android 2.3.4 |
| | Memory | 2GB DDR2 on board | 2GB 1333MHz DDR3 SDRAM | 4GB 1333MHz DDR3 | 4GB eMMC Flash + 512MB SDRAM |
| | Storage | CompactFlash® slot<br>SD card slot | 1.8" 32G SSD | mSATA 8G SLC | SD Slot |
| Communication | Wireless LAN | Wi-Fi 802.11 b/g/n | Wi-Fi 802.11 a/b/g/n | Wi-Fi 802.11 b/g/n | Wi-Fi 802.11 b/g/n |
| | Bluetooth | Bluetooth V3.0 + HS (Class II) | Bluetooth V2.1 + EDR (Class II) | Bluetooth V3.0 + EDR (Class II) | Bluetooth 2.1 + EDR |
| | Modem | WCDMA/HSUPA (option) | WCDMA/HSUPA (option) | WCDMA/HSUPA (option) | WCDMA/HSDPA |
| | GPS | Option | N/A | Option | GPS w/ internal antenna |
| Data Collection | Camera | 1.3 megapixels | 3 megapixels and LED light | 1.3 M CMOS camera (front) /<br>3 M CMOS camera (rear) | 2 M CMOS camera (front)/<br>5 megapixels CMOS camera (rear) |
| | Light Sensor | Ambient Light Sensor | N/A | N/A | N/A |
| | Barcode | 1D Laser/2D Imager Scan Engine | 1D Laser/2D Imager Scan Engine | 1D Laser/2D Imager Scan Engine | 1D Laser/2D Imager Scan Engine |
| | RFID | 13.56 MHz RFID support<br>ISO 14443A ( Mifare)<br>ISO 15693 | 13.56 MHz RFID support<br>ISO 14443A ( Mifare)<br>ISO 15693 | 13.56 MHz RFID support<br>ISO 14443A ( Mifare)<br>ISO 15693 | 13.56 MHz RFID support<br>ISO 14443A ( Mifare)<br>ISO 14443B ( Felica)<br>ISO 15693<br>NFC |
| Indicators & Buttons | LED Indicators | Power/ Wi-Fi/Bluetooth/HDD/ 3.75G Status LED | Power/ Wi-Fi/Bluetooth/ RFID/ Battery Status LED | Power/ Wi-Fi/Bluetooth/ RFID/ Battery Status LED | Charging/Full battery LED (Orange / Green)<br>BT enable / disable LED (Blue)<br>Wi-Fi enable / disable LED (Green)<br>3.5G enable / disable LED (Green) |
| | Hot Keys | 5-way navigation key<br>8 x Programmable function keys | 5-way navigation key<br>Barcode Scanner/ RFID / LED Torch/ Camera/ Wi-Fi/ Bluetooth/ SAS/Function Key | 5-way navigation key<br>Barcode Scanner/ RFID / LED Torch/ Camera/ Wi-Fi/ Bluetooth/ SAS/Function Key | Power on/off switch<br>Reset key<br>4 x Function keys<br>(Home / Menu / Back / Search) |
| I/O Interface | USB | 2 x USB 2.0 Full Speed<br>1 x Mini USB | 1 x USB 2.0 Full Speed | 1 x USB 3.0 | 2 x USB 2.0 |
| | LAN | 1 x 10M/100M/1G LAN | 1 x 10M/100M LAN | 1 x 10M/100M/1G LAN | 1 x 10M/100M LAN |
| | Audio | 2 x 1.5W Speaker | 1 x 2W Speaker | 1 x 2W Speaker | 1 x 1.5W Speaker |
| | | 1 x Mic in | 1 x Mic in | N/A | 1 x Digital Mic |
| | LED Torch | N/A | 1 x LED Torch | 1 x LED Torch | N/A |
| Power | Power Adapter | 12V @ 5A @ 60W | 12V @ 5A @ 60W | 12V @ 5A @ 60W | 19V @ 2.1A @ 40W |
| | Docking Power Adapter | N/A | 19V@ 4.74A @ 90W | 19V@ 4.74A @ 90W | N/A |
| | Battery | 7.4V 2400 mAh Li-ion Battery | Dual 11.1V 1880mAh Li-ion Battery | Dual 11.1V 1880mAh Li-ion Battery | Dual 11.1V 1880mAh Li-ion Battery |
| Environment | Operating Temperature | 0˚C ~ 40˚C | 0˚C ~ 40˚C | 0˚C ~ 40˚C | -10˚C ~ 40˚C |
| | Storage Temperature | -20˚C ~ 60˚C | -10˚C ~ 60˚C | -10˚C ~ 60˚C | -10˚C ~ 60˚C |
| | Humidity | 5%~95% non-condensing | 5%~95% non-condensing | 5%~95% non-condensing | 5%~95% non-condensing |
| | Drop Survival | 1.0 M | 90 cm | 90 cm | 1.2 M |
| | Environment Protection | IP 62 compliant front panel | IP 64 compliant front panel | IP 64 compliant front panel | IP 64 compliant front panel |
| | Certifications | CE/FCC | CE/FCC, Medical-grade Class B | CE/FCC, Medical-grade Class B | CE / FCC |
| Physical Characteristics | Dimension(LxWxH)(mm) | 255 x 180 x 37 | 270 x 265 x 29 | 270 x 265 x 29 | 248 x 153 x 36 |
| | Weight | 1.1 kg | 1.7 kg | 1.7 kg | 0.95 kg |





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# ICEFIRE

## 10.4” Mobile Clinic Assistant

- 10.4” TFT XGA LCD
- Intel® Atom™ D525 dual core platform
- Powered by Windows ® Embedded Standard 7 P(WES7P)
- Dual-mode input (Digitizer + Multi-Resistive Touch)
- Dual hot swappable batteries
- 1D/2D barcode reader, RFID reader, smart card reader and fingerprint reader
- Bluetooth, Wi-Fi, 3.75G wireless

TAIWAN EXCELLENCE 2012

3.75G/ HSUPA | Bluetooth | Wi-Fi | 1D Barcode Scanner | 2D Barcode Scanner

Digitizer Screen | Touch Screen | Camera | Fingerprint Reader | SCR | RFID | Windows XP | Intelligent Systems Alliance | F3 One Key Recovery | iEi | symantec.

# Mobile Clinic Assistant Applications

Retrieve patient data at bedside for optimal point-of-care treatment.

Instant access to patient medical history for real-time diagnosis.

Accurately capture and record patient symptoms during an emergency.

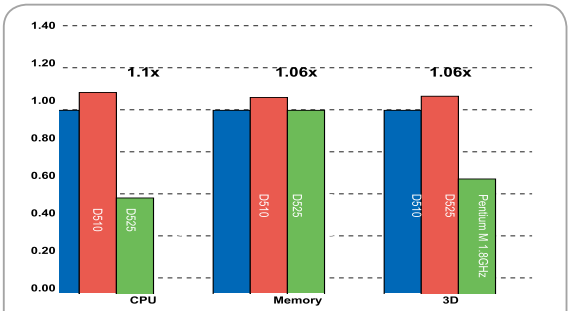
Increase productivity and decrease opportunities for error through documentation directly at point-of-care.

# High Performance and Low Power Consumption Mobile Platform

The ICEFIRE is powered by 1.8 GHz Intel® Atom™ D525 dual-core processor (1M cache). It is a compact and highly integrated application processor with excellent performance that allows low idle mode to improve power efficiency.

## Features

- **DDR3 support up to 4GB by UEFI BIOS**
  - » Power saving more than 30% compared to DDR2
  - » Higher bandwidth performance, up to 2133 MT/s standardized
- **UEFI BIOS**
  - » Under 10 seconds boot time for fast boot
  - » Supports more than 2.2 TB HDD capacity
  - » Supports dual ranks x16 DDR3 memory up to 2 GB per DIMM, system up to 4 GB
- **New graphic performance**
  - » The GPU contains 3rd generation graphics core GMA3150 and supports DX9*, MPEG2 hardware acceleration
  - » VGA resolution up to 2046 x 1536 pixels
  - » Single 18-bit LVDS resolution up to 1366 x 768 pixels




Pentium M replacement platform

D525: Intel® Atom™ dual-core CPU with DDR3 support. Its performance is 1.1x better than Intel® D510 (Intel® Atom™ dual-core CPU with DDR2)

Intel® Atom D510 1.66 GHz 1 MB/L2 Cache
Intel® Atom D525 1.8 GHz 1 MB/L2 Cache
Intel® 910GMLE Pentium® M 745 1.8 GHz/400 MHz 2 MB/L2 Cache

The ICEFIRE is preinstalled with Windows® 7 Professional for Embedded Systems. With Windows Touch, gestures, handwriting, voice recognition, and advanced 3D display control, users' experiences are limited only by their imagination.

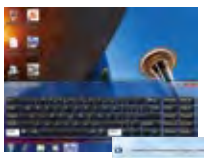
The ICEFIRE is designed based on Windows and Intel® open architecture to extend mobility for point-of-care and healthcare software applications. This mobility allows many tasks to be performed on the run, minimizing time wasted between the nursing station and the patient's room. The ICEFIRE enables nurses to deliver higher quality patient care while significantly improving productivity.

# Dual-Mode Input

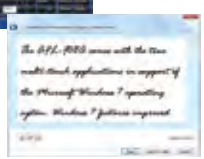
Along with Windows® 7 digitizer support and dual-mode input support, the ICEFIRE features both WACOM digitizer and traditional resistive touch input with auto-sensing and auto-switching. When a digitizer pen moves close to the screen of the ICEFIRE, the digitizer automatically takes effect and switches off resistive touch input mode.

The digitizer is a more accurate and sensitive input method that can detect stylus pressure, speed, and angle. This feature is suitable for a clinician to note patient's vital signs. Another key benefit of the digitizer is to prevent mis-touch. A clinician can use the digitizer pen to write accurate prescriptions without the worry of input errors. The working principles of the EMR® digitizer are as follows:

- The tablet surface incorporates a sensor board that detects the pen's movement.
- Weak energy is induced in the pen's resonant circuit by a magnetic field generated by the sensor board surface.
- The pen's resonant circuit then makes use of this energy to return a magnetic signal to the sensor board surface.



Enhanced on-screen keyboard



Hand-writing recognition

Dual input modes combined with acceleration keys make computing flexible and convenient for healthcare staff working in many different applications.

Digitizer Mode

Resistive Touch Mode

The ICEFIRE also provides Windows® 7 featured multi-touch, gesture, and hand-writing recognition.

Multi-Touch Support





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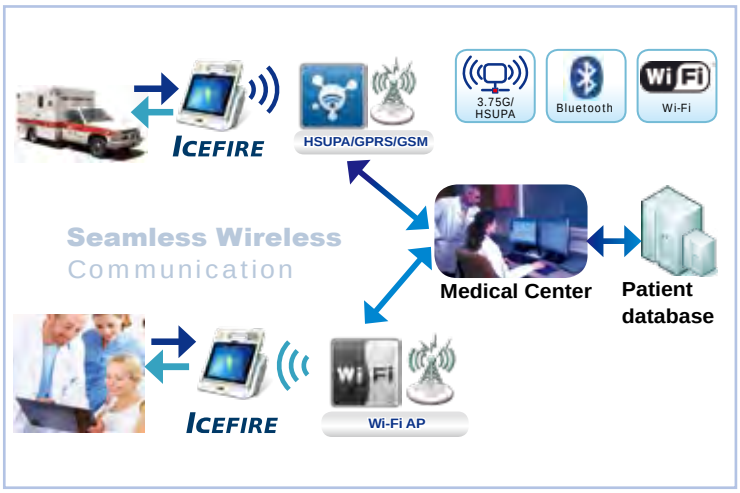
# Seamless Wireless Communication

In a local area where wireless LAN is available, the ICEFIRE connects to a wireless local area network (WLAN) via built-in 802.11 a/b/g/n wireless LAN communication module.

When wireless LAN is not available, the ICEFIRE connects to a wide area network (WAN) via telecommunication and the built-in 3.75G modem.

With mobile communication technology, you can improve ongoing and critical dialogue between medical staffs. Records are accurate, research is readily available, and the diagnosis and treatment process are streamlined. By combining seamless wireless communication technology, voice over IP (VoIP), central database connectivity, web-enabled medical IT and other applications, the ICEFIRE helps caregivers get back to their top priority — spending time with their patients and providing point-of-care service.




## Technology/Bands

- HSPA/UMTS – 800/850/900/1900/2100 MHz
- Quad-band EDGE/GPRS/GSM – 850/900/1800/1900 MHz
- Dual-band EV-DO/CDMA – 800/1900 MHz

## Advanced RF Technologies

Receive Diversity on all HSPA/UMTS/EV-DO/CDMA bands
Receive equalization

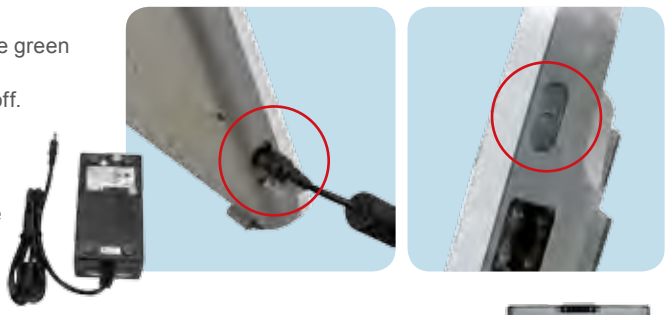
| RADIO | SUPPORT |
|---|---|
| EV-DO/EV-DO Rev. A 800MHz* | ✓ |
| EV-DO/EV-DO Rev. A 1900 MHz* | ✓ |
| HSDPA/HSUPA 800MHz* | ✓ |
| HSDPA/HSUPA 850MHz* | ✓ |
| HSDPA/HSUPA 900MHz* | ✓ |
| HSDPA/HSUPA 1900MHz* | ✓ |
| HSDPA/HSUPA 2100MHz* | ✓ |
| GSM/GPRS/EDGE 850MHz | ✓ |
| GSM/GPRS/EDGE 900MHz | ✓ |
| GSM/GPRS/EDGE 1800MHz | ✓ |
| GSM/GPRS/EDGE 1900MHz | ✓ |
| Standalone GPS, AGPS, gpsOneXTRA™ | ✓ |

Gobi supports major RF bands
around the world and GPS— all with one chipset Technology/Bands

# Efficient Power Management

## Illuminated Power Button Supports Laptop-style Power Management

- One click to boot up the system. The green LED turns on.
- One click to suspend the system or to resume from suspend mode. The green LED blinks when the system is in suspend mode.
- Push for four seconds to shut down the system. The green LED turns off.



## DC Power Input

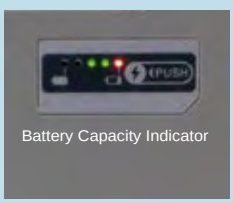
The bundled AC to DC power adapter provides 12 V DC to power the ICEFIRE in full-speed and charge the batteries simultaneously.

## Dual Battery Pack

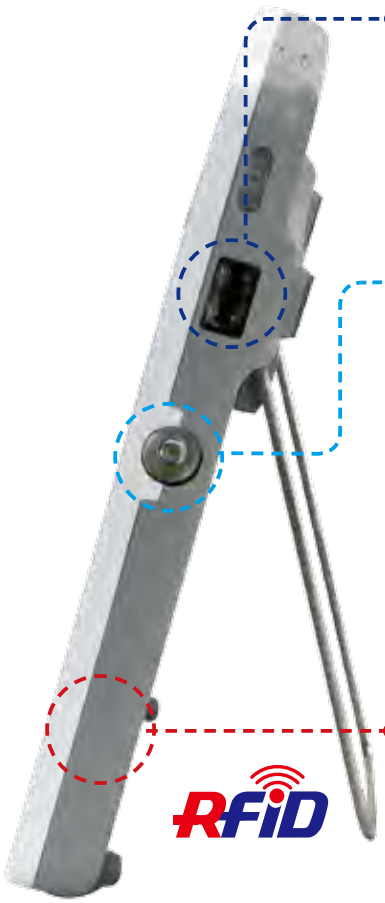
Each battery pack, with medical-grade certifications, provides 11.1 V 1880 mAh capacity and supports a hot swappable function. When one battery is removed, the system automatically switches power consumption to the other battery. With an additional battery pack and the hot swappable feature, the ICEFIRE ensures non-stop point-of-care, 24 hours a day, every day.

Each battery pack has capacity indicators. Besides these visual indicators, operating systems like Windows® 7 will also display information of available batteries and capacity on the desktop.

The ICEFIRE consumes the battery with lower power capacity first. When charging, the ICEFIRE charges the battery with higher power capacity first then the other.



# Advanced Data Acquisition Technology

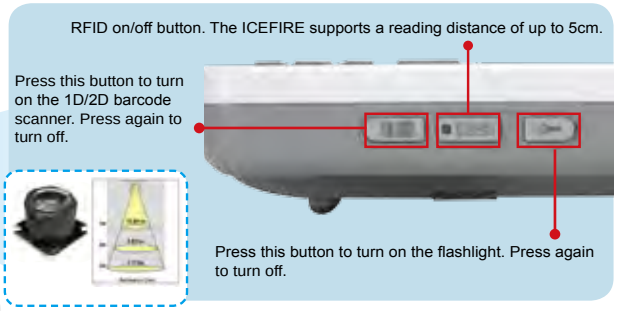


## 1D/2D Barcode Scanner

| | 1D | 2D |
|---|---|---|
| Speed | 200 scans/s auto adaptive | 60 images/s auto adaptive |
| Symbology | EAN/UPC, RSS, Code 39, Code 128, UCC/EAN 128, ISBN, ISBT, Interleaved, Matrix, Industrial and Standard 2 of 5, Codabar, Code 93/93i, Code 11, MSI, Plessey, Telepen, postal codes | Data Matrix, PDF417, Micro PDF 417, Maxicode, QR, Aztec, EAN.UCC composite |

## LED Torch for Night Time Use

High performance LED flashlight
--- Never leaves you in the dark


RFID on/off button. The ICEFIRE supports a reading distance of up to 5cm.
Press this button to turn on the 1D/2D barcode scanner. Press again to turn off.
Press this button to turn on the flashlight. Press again to turn off.

## 13.56 MHz RFID Reader Supports ISO14443A (Mifare) ISO15693

The built-in RFID reader for data collection enables hospitals to automate data capture, improve data accuracy, increase productivity and streamline everyday processes in patient rooms, admittance, laboratories and the pharmacy.

## 3 Megapixels Camera with LED Flash

- Integrate a 3 megapixels camera to capture images or data and immediately save it in the ICEFIRE or send it back to the server via Wi-Fi or HSUPA.
- Press the camera hot key to turn on the camera.
- Choose “Options” to preview and display the pictures.

# Security and Access Control

Combined with Windows® 7 Embedded security management feature, the built-in fingerprint reader allows hospitals to control access priorities.

The optional USB interface smart card reader supports identity verification and makes the ICEFIRE an ideal access control device for transaction-based medical cloud-computing systems.

Optional Smart Card Reader (SCR)

Fingerprint Reader





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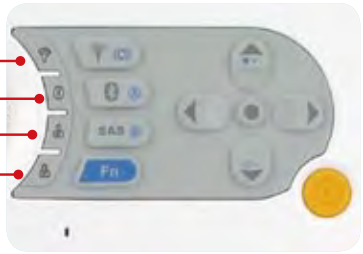
# Indicators and Hot Keys

## Indicators

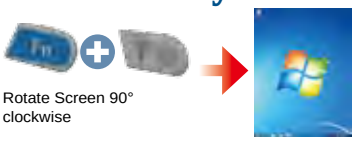
- Green light shows Wi-Fi is enabled
- Blue light shows Bluetooth is enabled
- Orange light shows that Battery-1 is being charged
- Orange light shows that Battery-2 is being charged



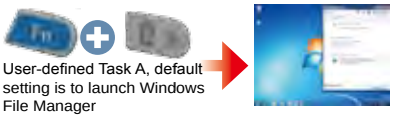
## Hot Keys

- 4-direction keys (UP, DOWN, LEFT, and RIGHT), and ENTER key
- Wi-Fi on/off button
- Bluetooth on/off button
- Secure Attention Sequence (SAS): identical to “CTRL-ALT-DEL” keystroke combination

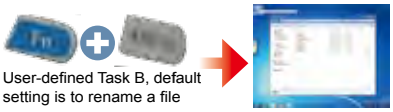
## Function Key Combinations



Rotate Screen 90° clockwise



User-defined Task A, default setting is to launch Windows File Manager



User-defined Task B, default setting is to rename a file

Function Key + Up/Down Key LCD Brightness Control

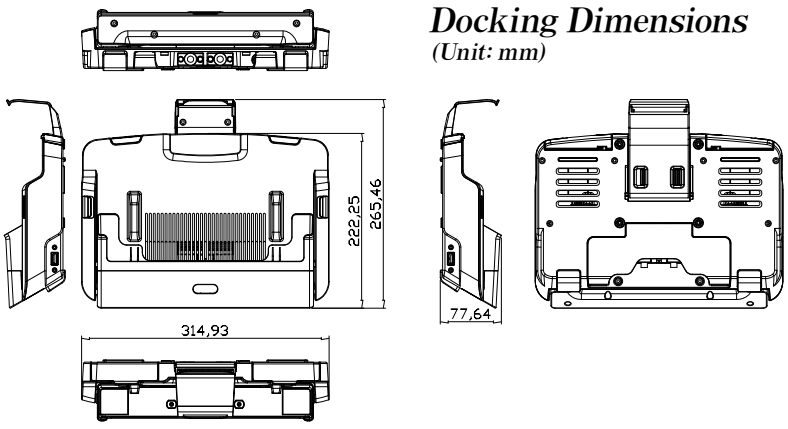
# Multi-functional Docking Station

## Battery Charging Packs

The ICEFIRE Docking Station (ICEFIRE-DS) provides power to one docked ICEFIRE and two plug-in battery packs simultaneously.

### *Docking Dimensions*

*(Unit: mm)*



# PC-Style Peripherals

## 10/100 Mbps Ethernet LAN

Whenever Ethernet LAN is available, the LAN port of the ICEFIRE provides another faster and more efficient networking option.

## Bluetooth v2.1 with EDR

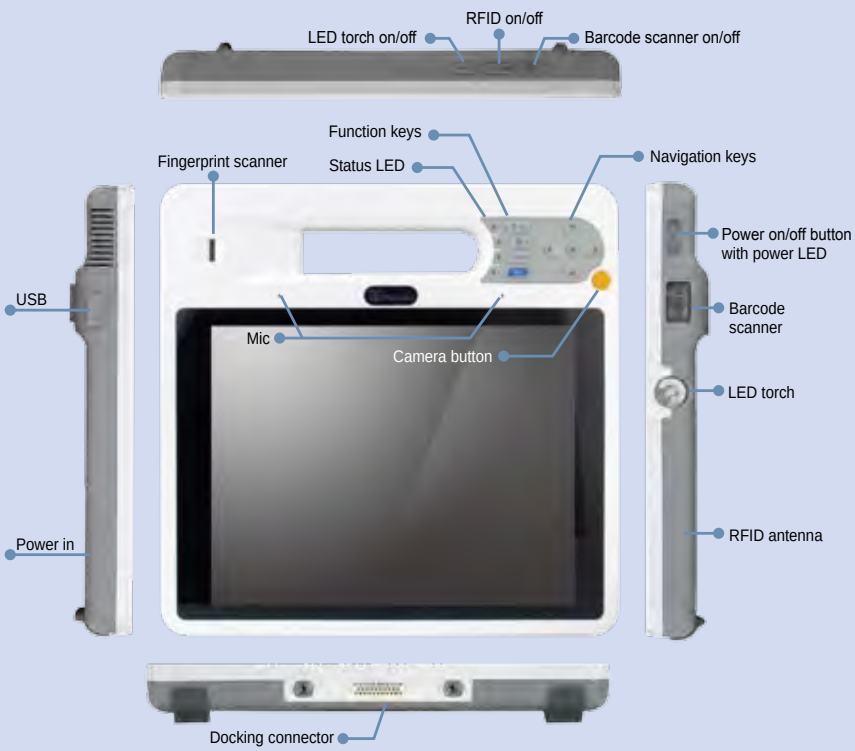
Bluetooth provides a secure way to connect and exchange information with devices such as a mobile phone, handsfree headset, HID, printer, speaker, or Bluetooth medical device.

## Control Center Utility

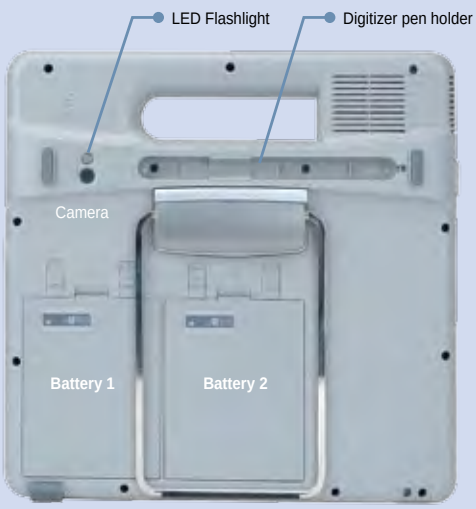
With ICEFIRE control center, user can define the hot keys and direction keys, which can provide them much flexible choice and meet their behavior.

### Advantages

- Easy to setup
- Flexible selection table
- Pre-install tips




*ICEFIRE Dimensions (Unit: mm)*





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# Compact, Slim, and Ergonomic Design

## IP64 Compliant and Easy-to-Clean Plastic Housing

## Ergonomic Handlebar and Hinge Stand

Handle design for easy carry

Ergonomic Grip Handle

Desk-mount stand for ease of use

## Medical-grade Certification Approved

**EN 60601-1**
**EN 60950**

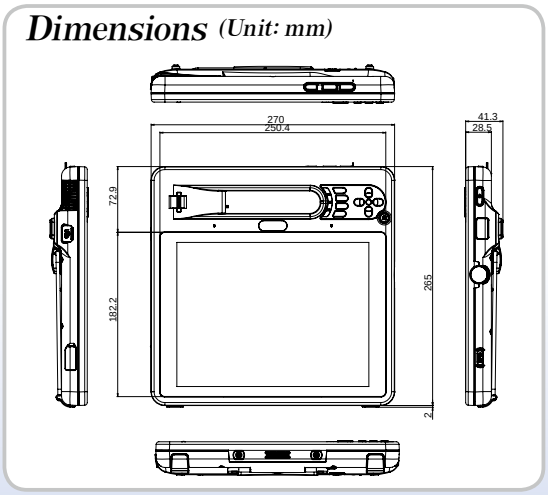
## Antibacterial Housing

## Slim and Lightweight Design

## WOW (Workstation on Wheels) Installation

**The combination of ICEFIRE and ICEFIRE Docking Station is an ideal solution for a healthcare cart:**

- Desktop, swing arm, or VESA mounting options
- Expanded I/O connects to peripherals such as keyboard/mouse, printer, barcode scanner, or medical equipments
- Easy to draw out and draw back
- Convenient bedside healthcare
- Power and battery options support uninterrupted point-of-care




## Easy and Flexible Installation

Desktop Installation

Wall-mount Installation

Ergonomic Sliding and Hooking Design

# ICEFIRE-ET

## Enterprise Tablet PC

- 10.4” TFT 350 cd/m² XGA LCD with multi resistive touch
- Intel® Atom™ D525 dual core 1.8 Ghz platform
- Powered by Windows® Embedded Standard 7 P
- 3 Megapixels camera with LED flash
- Bluetooth, Wi-Fi a/b/g/n, Ethernet LAN
- Dual hot swappable batteries
- Optional docking station / smart card reader

Bluetooth | Wi-Fi | Touch Screen | Camera | Fingerprint Reader | SCR | Intelligent Systems Alliance

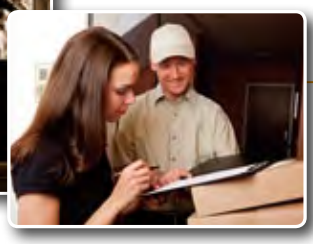
# Applications

## Enterprise Mobility

Using technology to quickly move products helps save your time and increases productivity. The right technology enables the flow of information between handheld devices used by your workers and your core business systems. The ICEFIRE-ET utilizes wireless local area networks (WLANs) and management software to increase the data transfer speed and optimize your working mobility in logistics and warehousing environments.

## Inspection

The ICEFIRE-ET is most suitable for inspection applications. It features an ergonomic and light weight design that is easy to carry around on-the-job. It also offers exceptional functions that allow information to be stored in real-time and help businesses to provide transparent inspection and accurate information.



## Logistics and Warehouse

Enhancing on-duty staff work force and mobility, the tablet PC brings more efficiency to the workplace. All data and information are saved in the ICEFIRE-ET and can be transferred via wireless communication providing real-time responses without any loss.





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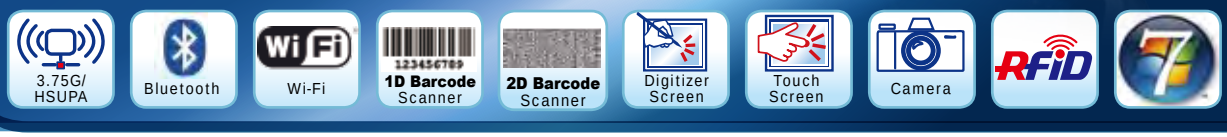
# ICEFIRE 2

New

## 10.4" Mobile Clinic Assistant

- 10.4” TFT XGA LCD
- Intel® Atom™ N2800 1.86GHz processor
- Powered by Windows® Embedded Standard 7 P
- Built-in 8GB mSATA storage
- Bluetooth, Wi-Fi, 3.75G wireless with GPS
- 1D/2D barcode reader, 13.56MHz RFID reader
- Dual-mode input (Digitizer + Multi-Resistive Touch)
- Dual hot swappable battery
- Dual Camera:
  1.3 Megapixels front camera
  3.0 Megapixels rear camera

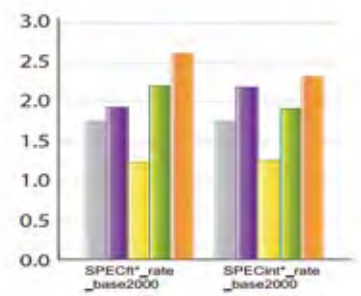



# High Performance, Low Power Consumption CPU for Fanless Design

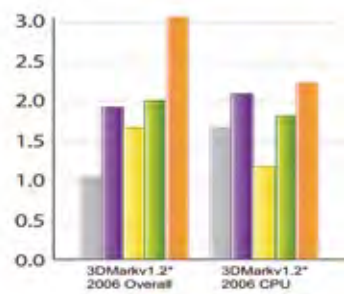
The new generation Intel® Atom™ N2800 processor provides reduced power consumption with high performance suitable for mobile devices in industrial computing. Benefits include:

- Display options include two digital ports supporting extra LVDS/HDMI/VGA interface
- Two times improved graphics with two HD video support
- 2 times improved graphics with 2 HD video support
- Faster memory up to DDR3 1066MHz
- Support fan-less design

**Processor Performance**




**Graphics Performance**




Intel® Atom™ processor D525
Intel® Atom™ processor D2700
Intel® Atom™ processor N455
Intel® Atom™ processor N2600
Intel® Atom™ processor N2800

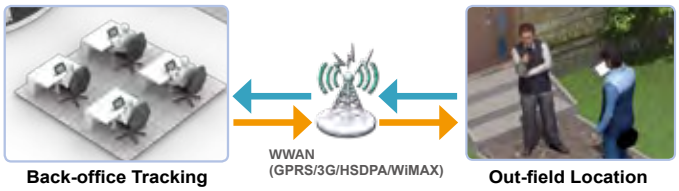
**CPU Specification Comparison**

| | ICEFIRE | ICEFIRE2 | |
|---|---|---|---|
| Core Functionality | 1.67 GHz (N455)<br>1.8 GHz (D525) | 1.6 GHz (N2600)<br>1.85 GHz (N2800) | |
| Process Technology / Packing Size | 45-nm / 22x22 | 32-nm / 22x22 | |
| Graphics Base Frequency | 200 MHz (N455)<br>400 MHz (D525) | 400 MHz (N2600)<br>640 MHz (N2800) | |
| Memory Technology | DDR3 667 (N455)<br>DDR3 800 (D525) | DDR3 800 (N2600)<br>DDR3 1066 (N2800) | |
| Max Memory Capacity | 2GB (N455)<br>4GB (D525) | 2GB (N2600)<br>4GB (N2800) | |
| CPU / TDP | D525 / 13W | N2600 / 3.5W | N2800 / 6.5W |
| Chipset / TDP | ICH8M / 2.4W | NM10 / 1.5W | NM10 / 1.5W |
| Power kit / TDP | Power / 7W | Power / 3W | Power / 3W |
| Total | 22.4W | 8W | 11W |

# GPS Application : Position & Location

Together with wireless network technology (such as 3G), the built-in GPS tracks the exact location of the ICEFIRE users:

- Users can be located on a map to reference his/her own location in relation to other landmarks. With location based services, mobile workers can locate important destinations such as gas stations and customers in an unknown territory.
- Location information obtained from the GPS can be transmitted to the backend office through wireless broadband connectivity, allowing employees to be tracked while they are on the move.




# mSATA Storage

mSATA SSD leverages the speed and reliability of the SATA interface, providing high-performance and cost-effective storage for smaller devices and enabling more compact integration into a wide variety of applications. Compared to the traditional HDD and CF card storage, mSATA has the following advantages:

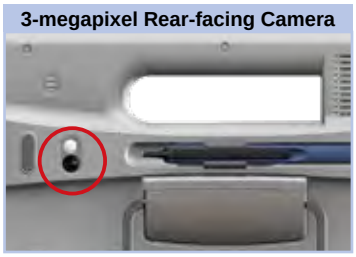
- Fast re-write capabilities
- Able to withstand vigorous vibrations
- Small in size

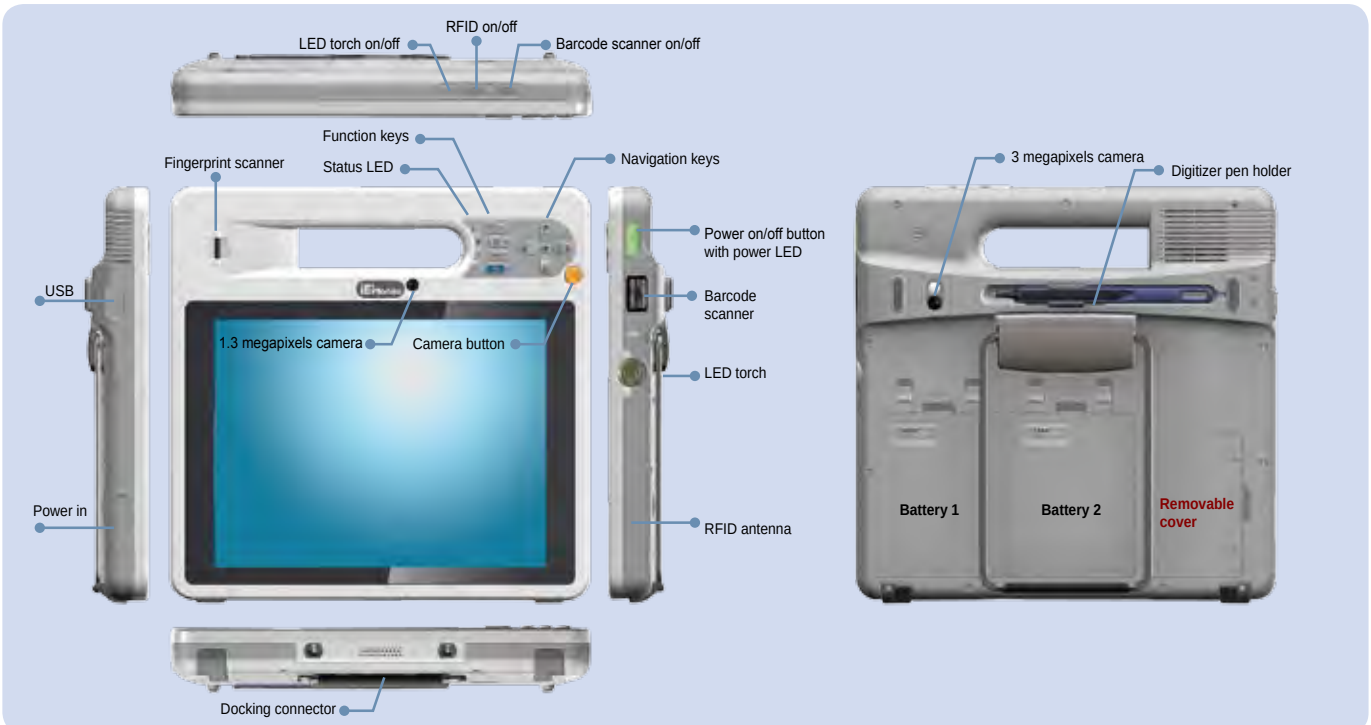
# Flexible Module Expansion Slot

Located at the back of the ICEFIRE 2, the module expansion slot is designed for easy and fast exchange of a variety of modules including RFID readers. This design brings functional versatility to the ICEFIRE 2 to serve a diverse range of applications.

# Integrated Dual Camera

The ICEFIRE 2 is integrated with two camera, one on the front and one on the rear. The 3-megapixel rear-facing camera can be utilized for photographic and video documentation purposes. The 1.3-megapixel front-facing camera enables unified video communications wirelessly.







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# *Selection Guide*

| | | ICEFIRE | | | ICEFIRE 2 | | |
|---|---|---|---|---|---|---|---|
| **Model** | | **ICEFIRE-T10A HU/2G-32S-R11** | **ICEFIRE-T10A-TR/2G-32S-R10** | **ICEFIRE-T10A-ET/2G-32S-R10** | **ICEFIRE2-T10-HU-R10** | **ICEFIRE2-T10-TR-R10** | **ICEFIRE2-T10-ET-R10** |
| Display | LCD Size | 10.4'' TFT LCD | | | | | |
| | Brightness (cd/m²) | 350 cd/m² | | | | | |
| | Max Resolution | 1024 x 768 pixels XGA | | | | | |
| | Viewing Angle | 88/88/88/88 Deg. | | | | | |
| | Touch Screen | Resistive Support Multi-touch and Gesture | | | | | |
| | Digitizer | 256 levels @ full scale pressure resolution | N/A | N/A | 2048 levels@ full scale pressure resolution | N/A | N/A |
| System | CPU | 1.8GHz Intel® Atom™ D525 | | | 1.86GHz Intel® Atom™ N2800 | | |
| | Chipset | Intel® ICH8M | | | Intel® NM10 | | |
| | Operating System | Microsoft® Windows® Embedded Standard 7 P (WES7P) | | | Microsoft® Windows® Embedded Standard 7 P (WES7P) | | |
| | Memory | 1333MHz 2GB DDR3 SDRAM | | | 1333MHz 4GB DDR3 SDRAM | | |
| | Storage | 32GB SSD | | | mSATA 8G SLC | | |
| Communication | Wireless LAN | Wi-Fi 802.11a/b/g/n | | | Wi-Fi 802.11b/g/n | | |
| | Bluetooth | Bluetooth V2.1+ EDR (Class 2) | | | Bluetooth V3.0 + EDR (Class 2) | | |
| | Modem | WCDMA/HSUPA | N/A | N/A | GPRS/CDMA/HSDPA | N/A | N/A |
| | GPS | N/A | N/A | N/A | Yes | N/A | N/A |
| Data Collection | Camera | 3 megapixels and LED Light | | | 1.3 megapixels CMOS camera (Front) / 3 megapixels CMOS camera (Rear) | | |
| | Barcode | 1D/2D Imager Scan Engine | | N/A | 1D/2D Imager Scan Engine | | N/A |
| | RFID | 13.56 MHz RFID supports ISO15693 and ISO14443A/B (by customization) compliant | | N/A | 13.56 MHz RFID support ISO 15693 and 14443A /14443B (by customization) compliant | | N/A |
| Fingerprint Reader | | Yes | Yes | N/A | Yes | Yes | N/A |
| Indicators & Buttons | LED Indicators | Power/ Wi-Fi/Bluetooth/ RFID/ Battery Status LED | | Power/ Wi-Fi/Bluetooth/ Battery Status/ | Power/ Wi-Fi/Bluetooth/ RFID/ Battery Status | | Power/ Wi-Fi/ Bluetooth/ Battery Status |
| | Keys | 5-way Navigation key/Barcode Scanner/RFID/LED Torch/Camera/Wi-Fi/Bluetooth/SAS/Function Key | | 5-way Navigation key/ Camera/Wi-Fi/Bluetooth/ SAS/Function Key | 5-way navigation key/ Barcode Scanner/RFID/LED Torch/Camera/Wi-Fi/ Bluetooth/SAS/Function Key | | 5-way navigation key/ LED Torch/Camera/ Wi-Fi/Bluetooth/ SAS/ Function Key |
| I/O Interface | USB | 1 x USB 2.0 | | | 1 x USB 3.0 | | |
| | LAN | 1 x 10/100 Mbps | | | 1 x 10/100/1000 Mbps | | |
| | Audio | 1 x 2W Speaker, 1 x Mic in | | | | | |
| | LED Torch | 1 x LED Torch | 1 x LED Torch | N/A | 1 x LED Torch | 1 x LED Torch | N/A |
| Power | Power Adapter | 12V @ 5A @ 60W | | | | | |
| | Docking Power Adapter | 19V @ 4.74A @ 90W | | | | | |
| | Battery | Dual 11.1V 1880mAh Li-ion Battery | | | | | |
| Environment | Operating Temperature | 0ºC to +40ºC | | | | | |
| | Storage Temperature | -10ºC to +60ºC | | | | | |
| | Humidity | 5%~95% non-condensing | | | | | |
| | Drop Survival | 90 cm | | | | | |
| | Environmental Protection | IP 64 compliant front panel | | | | | |
| | Certifications | CE/FCC, Medical-grade Class B EN 60601-1/ EN60950 | CE/FCC, Medical-grade Class B EN 60601-1/ EN60950 | CE/FCC | CE/FCC, (Medical-grade Class B) | CE/FCC, (Medical-grade Class B) | CE/FCC |
| Physical Characteristics | Dimensions (LxWxH) (mm) | 270 x 265 x 29 | | | 270 x 265 x 29 | | |
| | Weight | 1.7 kg | 1.7 kg | 1.6 kg | 1.7 kg | 1.7 kg | 1.6 kg |

# Ordering Information

| Part No. | Description |
|---|---|
| **ICEFIRE: Intel® Atom™ D525 CPU with Windows® Embedded Standard 7** | |
| ICEFIRE-T10A-HU/2G-32S-R11 | 10.4" TFT-LCD 350 cd/m² XGA Industrial Mobile Clinical Assistant with Dual-core Intel® Atom™ D525 1.8GHz CPU, Multi-Touch and Digitizer Dual Mode, 2GB DDR3 RAM, HSUPA, 802.11 a/b/g/n Wireless, Bluetooth, GPS, 1D/2D Barcode Scanner, RFID, 3M Pixel Camera, LED Torch, 32G SSD, WES7P RoHS |
| ICEFIRE-T10A-TR/2G-32S-R10 | 10.4" TFT-LCD 350 cd/m² XGA Industrial Mobile Clinical Assistant with Dual-core Intel® Atom™ D525 1.8GHz CPU, Resistive Multi-Touch, 2GB DDR3 RAM, 802.11 a/b/g/n Wireless, Bluetooth, 1D/2D Barcode Scanner, RFID, 3M Pixel Rear Camera, LED Torch, 32G SSD, WES7P, RoHS |
| ICEFIRE-T10A-ET/2G-32S-R10 | 10.4" TFT-LCD 350 cd/m² XGA Industrial Mobile Clinical Assistant with Dual-core Intel® Atom™ D525 1.8GHz CPU, Resistive Multi-Touch, 2GB DDR3 RAM, 802.11 a/b/g/n Wireless, Bluetooth, 32G SSD, WES7P RoHS |
| **ICEFIRE 2: Intel® Atom™ N2800 CPU with Windows® Embedded Standard 7** | |
| ICEFIRE2-T10-HU-R10 | 10.4" TFT-LCD 350 cd/m² XGA Industrial Mobile Clinical Assistant with Dual-core Intel® Atom™ N2800 1.86GHz CPU, Multi-Touch and Digitizer Dual Mode, 4GB DDR3 RAM, HSUPA, 802.11 b/g/n Wireless, Bluetooth, GB, 1D/2D Barcode Scanner, RFID, 3M Pixel Rear Camera, 1.3M Pixel Front Camera, LED Torch, 8G, WES7P RoHS |
| ICEFIRE2-T10-TR-R10 | 10.4" TFT-LCD 350 cd/m² XGA Industrial Mobile Clinical Assistant with Dual-core Intel® Atom™ N2800 1.86GHz CPU, Resistive Multi-Touch, 4GB DDR3 RAM, 802.11 b/g/n Wireless, Bluetooth, 1D/2D Barcode Scanner, RFID, 3M Pixel Rear Camera, 1.3M Pixel Front Camera, LED Torch, WES7P, RoHS |
| ICEFIRE2-T10-ET-R10 | 10.4" TFT-LCD 350 cd/m² XGA Industrial Mobile Clinical Assistant with Dual-core Intel® Atom™ N2800 1.86GHz CPU, Resistive Multi-Touch, 4GB DDR3 RAM, 802.11 b/g/n Wireless, Bluetooth, WES7P RoHS |

# Model Variations

| Part No. | Digitizer | Touch | Wireless | Bluetooth | 3.75G | GPS | Barcode | RFID | Fingerprint Reader | Memory |
|---|---|---|---|---|---|---|---|---|---|---|
| **ICEFIRE: Intel® Atom™ D525 CPU with Windows® Embedded Standard 7** | | | | | | | | | | |
| ICEFIRE-T10A-HU/2G-32S-R11 | Digitizer | Resistive Multi-touch | 802.11 a/b/g/n | Ver. 2.1+EDR, Class 2 | Qualcomm | N/A | 1D/2D | RFID | Yes | 32G SSD |
| ICEFIRE-T10A-TR/2G-32S-R10 | N/A | Resistive Multi-touch | 802.11 a/b/g/n | Ver. 2.1+EDR, Class 2 | N/A | N/A | 1D/2D | RFID | Yes | 32G SSD |
| ICEFIRE-T10A-ET/2G-32S-R10 | N/A | Resistive Multi-touch | 802.11 a/b/g/n | Ver. 2.1+EDR, Class 2 | N/A | N/A | N/A | N/A | N/A | 32G SSD |
| **ICEFIRE 2: Intel® Atom™ N2800 CPU with Windows® Embedded Standard 7** | | | | | | | | | | |
| ICEFIRE2-T10-HU-R10 | Digitizer | Resistive Multi-touch | 802.11 b/g/n | Ver. 3.0+EDR Class 2 | Qualcomm | GPS | 1D/2D | RFID | Yes | 8G mSATA |
| ICEFIRE2-T10-TR-R10 | N/A | Resistive Multi-touch | 802.11 b/g/n | Ver. 3.0+EDR Class 2 | N/A | N/A | 1D/2D | RFID | Yes | 8G mSATA |
| ICEFIRE2-T10-ET-R10 | N/A | Resistive Multi-touch | 802.11 b/g/n | Ver. 3.0+EDR Class 2 | N/A | N/A | N/A | N/A | N/A | 8G mSATA |

# Packing List

| Item | Part No. | HU | TR | ET |
|---|---|---|---|---|
| Digitizer Pen | 7Z000-SU5E10S06AU00X-RS | • | | |
| Stylus | 43125-0002C0-00-RS | | • | • |
| Battery Pack | 31603-000016-RS | • | • | |
| Battery Pack-B | 31603-000020-RS | | | • |
| Medical-grade Power Adapter (12V/60W) | 63040-010060-020-RS | • | • | |
| Non-Medical-grade Power Adapter (12V/60W) | 63040-010060-030-RS | | | • |
| User's Manual CD | 7B000-000552-RS | • | • | • |

Carrying Case

Docking Station

Smart Card Reader

Battery Pack

12V Power Adapter

19V Power Adapter

Digitizer Pen

Stylus

# Optional Accessory List

| Item | Part No. | Description |
|---|---|---|
| Docking Station | ICEFIRE-T10A-DS01-R10 | ICEFIRE-T10A Docking Station |
| | 63040-010090-000-RS | Medical Certification Docking Power Adapter, 19V/4.74A/90W |
| | ICEFIRE-T10A-DS02-R10 | ICEFIRE-T10A Docking Station |
| | 63040-010090-020-RS | Non-Medical Certification Docking Power Adapter, 19V/4.74A/90W |
| Smart Card Reader | ICEFIRE-T10A-SCR01-R10 | USB 2.0 (Full Speed) Smart Card Reader Complies with ISO7816-1,2,3 for ICEFIRE-T10A |
| Battery Pack | 31603-000016-RS | 11.1V 1880 mAh Battery |
| Battery Pack-B | 31603-000020-RS | 11.1V 1880 mAh Battery, Black |
| Digitizer Pen | 7Z000-SU5E10S06AU00X-RS | Digitizer Sensor Pen |
| Stylus | 43125-0002C0-00-RS | Touch Pen |
| Carrying Case | 7Z000-ICEFIRET10APOUCH-RS | Black, leather protective bag with shoulder strap |




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# ICEROCK

## Infotainment Tablet PC

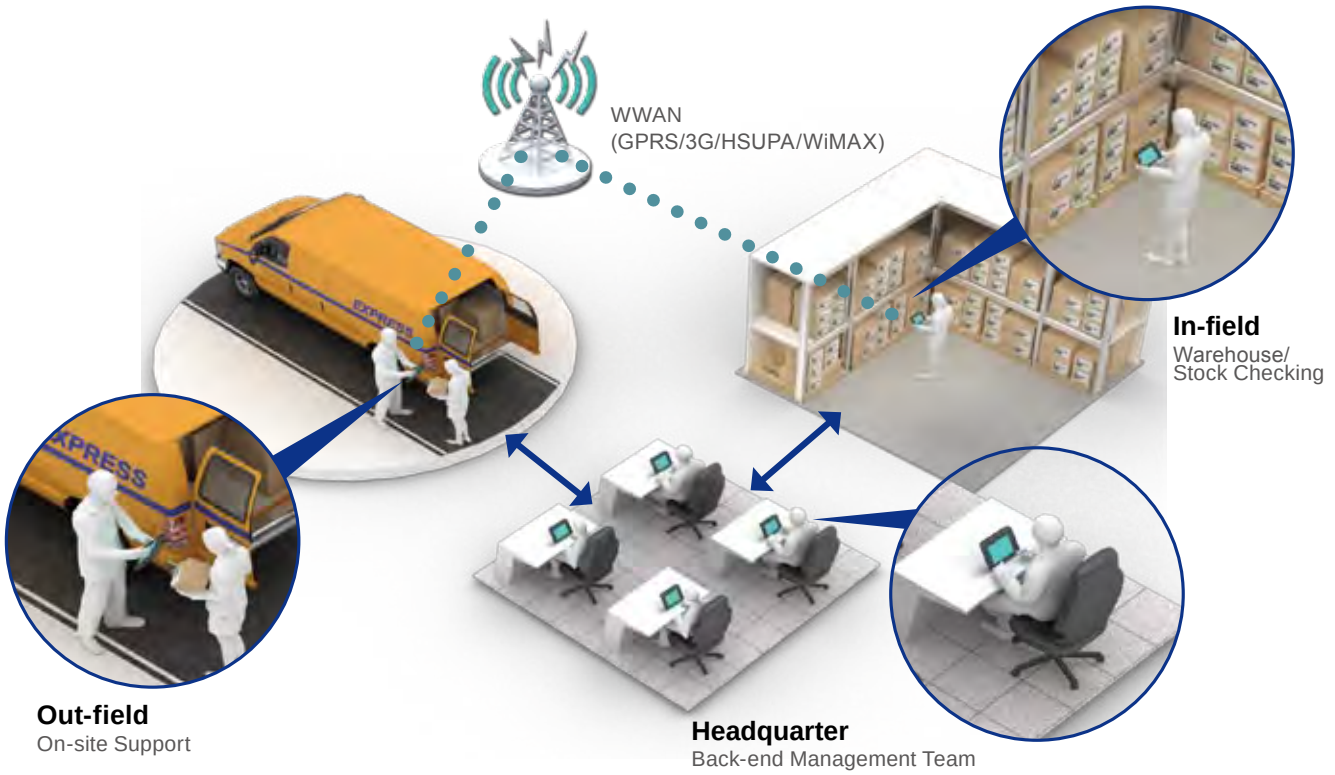
- 8” 350 cd/m² TFT XGA LCD
- Intel® Atom™ Z530 platform
- Powered by Windows® XP Embedded
- Bluetooth, Wi-Fi, 3.75G wireless
- Optional 1D/2D barcode scanner and 13.56 MHz RFID reader compliant with ISO 15693 and ISO 14443A

Wi-Fi | Bluetooth | 1D Barcode Scanner | 2D Barcode Scanner | RFID | 3.75G/ HSUPA | Camera | IP62 | Touchscreen | Fanless | Windows XP | Intel Intelligent Systems Alliance

## Application

The ICEROCK is a semi-rugged and powerful tablet PC for indoor, outdoor and home automation applications. It can be applied across vertical markets that need a robust device for harsh work environments.

The ICEROCK utilizes the power of Intel® Z530 processors and integrates Wi-Fi 802.11 b/g/n, Bluetooth and enhanced Gobi™3000 mobile broadband for out-field users.



# Easy to Use

## Ambient Light Sensor

Automatically adjusts the screen brightness for optimum visibility and energy efficiency.

## 1.3 Megapixels Camera and Microphone

Built-in 1.3 megapixels video intercom device allows for real-time communication. The webcam performs well in low light situations.

## Rotate with G-Sensor

Automatically toggles between portrait and landscape display mode providing the most comfortable viewing experience.

## Eight Function Keys

F1~F8 function keys help to simplify frequently used applications by pressing a single shortcut key. The Function Keys can be programmed for customization.

| Key | Functions |
|---|---|
| Fn+F1 | Sleep |
| Fn+F2 | Volume ON/OFF |
| Fn+F3 | Volume Up |
| Fn+F4 | Volume Down |
| Fn+F5 | Auto Dimming |
| Fn+F6 | Brightness Up |
| Fn+F7 | Brightness Down |
| Fn+F8 | LCD ON/OFF |

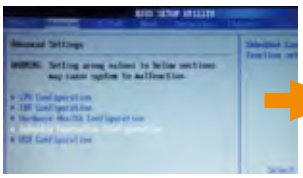
| Key | Description |
|---|---|
| SAS(Fn) | Secure Attention Sequence (Alt+Ctrl+Del) |

| Key | Functions |
|---|---|
| Arrow Up | Up |
| Arrow Down | Down |
| Arrow Right | Right |
| Arrow Left | Left |
| Enter Key | Enter |
| Fn+Arrow Up | Page Up |
| Fn+Arrow Down | Page Down |
| Fn+Arrow Right | End |
| Fn+Arrow Left | Home |

## G-sensor Setting

Disabled by default, the G-sensor can be set-up in BIOS.Use the function key to select BIOS SET UP. Press F4 to go back to the previous menu.

The automatic screen rotation sensitivity can be enhanced by enabling G-sensor with an ODM.



## After Enabling the G-sensor Function

1. Please make sure to install the Graphics Driver before adjustment
2. Enable G-sensor in BIOS
3. Calibration window will appear after enabling the G-sensor
4. ICEROCK has to be laid down on a flat surface
5. Press Enter to complete G-Sensor calibration

## LED Indicators

| | | |
|---|---|---|
| Indicator 1 | AC power in/Battery on (Only Battery with AC Power) Battery mode: Red LED On Battery mode and low power: Red LED Flash | (Battery and AC Power in) Battery charge mode: Green LED blinks Battery charge mode and full battery: Green LED on |
| Indicator 2 | Wireless/Bluetooth Enable: LED on; Disable: LED off | |
| Indicator 3 | HD Enable: LED on; Disable: LED off | |
| Indicator 4 | 3.75G Enable: LED on; Disable: LED off | |

# Reliable

## IP62 Compliant Front Panel Protection

Provides protection against damage caused by accidental spills and dust.

## One Key Recovery

IEI's useful One Key Recovery solution includes exclusive technology to backup and recover your operating system with just one simple click when your computer faces the following situations:

- Severe virus attack
- Operating system crash
- Natural or man-made disasters

IEI Recovery Kit

# Powerful

## High Graphics Performance Supports H.264, MPEG1/2/4, VC-1/ WMV9 High Definition Decoding

The ICEROCK is powered by an Intel® Atom™ Z530P with full hardware acceleration which eliminates the need for software decoding and the risk of overloading the processor. With low CPU resource utilization, the ICEROCK is optimized for multitasking.

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# Mobile

## 802.11b/g/n Wireless LAN

Integrated PIFA antenna on the ICEROCK ensures an uninterupted wireless connection and provides up to IEEE 802.11n wide bandwith operation. Frees cables and clutter from your workspace.

## Bluetooth V3.0+HS CLASS II

A preinstalled Bluetooth module communicates with a wide range of electronic devices from PDAs and cellphones to barcode readers. Transmission performance is greater than 20m in free space.

## 3.75G HSUPA

### Mobile 3.75G Connection

Free Wi-Fi hotspots will only get you so far. Stay connected with a mobile broadband Internet connection over 3G mobile phone network while you're on the move.

**Supported Bands**

*HSUPA/UMTS –800/850/900/1900/2100 MHz
*Quad-band EDGE/GPRS/GSM –850/900/1800/1900 MHz
*Dual-band EV-DO/CDMA

Warehouse Management

Multimedia Control Center

Construction Site

# Communication Applications

## 1.Surveillance Management

The ICEROCK can monitor factories, offices and other places such as VNC software through LAN, 3.75G or Wi-Fi connection.

## 2. Remote Login

Users can remotely login via LAN, 3.75G and Wi-Fi such as VPN

Example: use 3.75G connection to login a NAS server.

## 3.Wireless Communication

Use communication software such as SameTime or Skype via LAN & 3.75G & Wi-Fi and Bluetooth earphone.

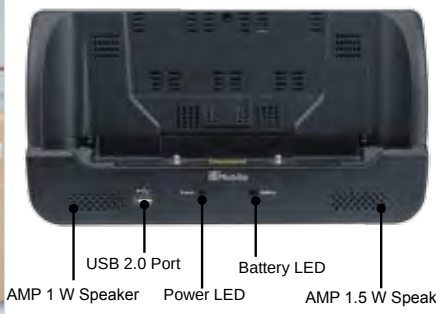
## 4.Ordering System

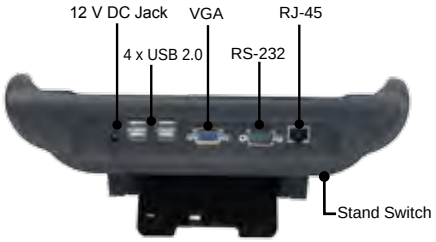
The ICEROCK can be set up as a POS station when used together with a handheld order terminal such as the MODAT-200.
It can also be displayed in the kitchen or connected to a Bluetooth printer to print out receipts.

# Diverse Installation Methods

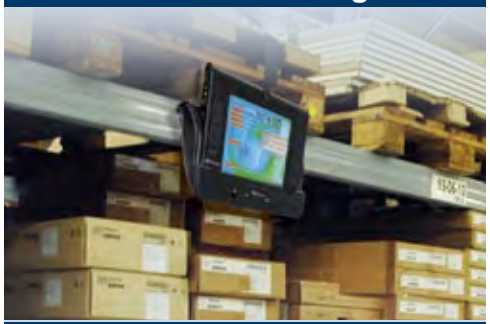
## Desktop with Docking Station

### Docking Station (Optional)
### ICEROCKDS-08A-R10




## Wall Mount with Docking Station



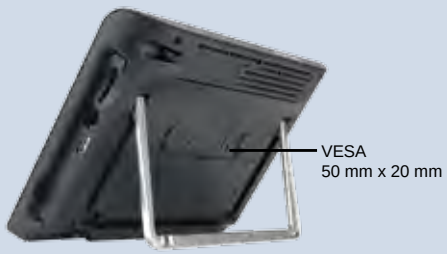
### Wall Mouting Options

VESA Stand

Adjustable Hinge

VESA 75 mm x 75 mm

## Built-in Stand




### Docking Station Provides Second Display Connection

The docking station provides a VGA out connector that connect the ICEROCK to a larger second display such as a projector, TV or monitor.

# Optional Battery Pack

## Larger Battery Pack

### Longer Power Support – Optional Larger Battery Capacity

5000 mAh capacity is powerful enough to support the ICEROCK's rich wireless communication and various data collection functions.

**Part No. 31603-000022-RS**

**Specifications**

| | Item | Rating Performance | Remark |
|---|---|---|---|
| 1 | Nominal capacity | 5000 mAh | In standard charging |
| 2 | 7.4VNominal Voltage | 7.4V | Within 1 hour after quick charging |
| 3 | Maximum charge voltage | 8.4V | |
| 4 | Operating condition | Charge: 0˚C~40˚C<br>Discharge: -10˚C~60˚C | |
| 5 | Storage temperature | -20~60˚C | |



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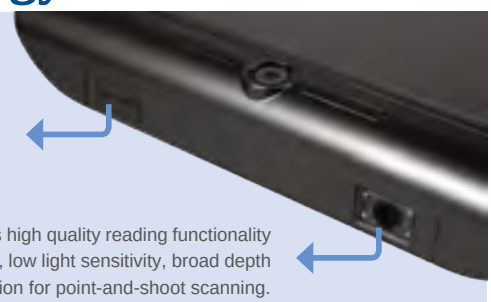
# ICEROCK-BAR

**ICEROCK-08A-BAR-2G-R12**
**ICEROCK-08A-BAR-HU/2G-R12**

# Advanced Data Acquisition Technology

## RFID Reader

Certified with ISO15693, ISO14443A, and ISO14443B, the built-in RFID reader for data collection automates data capture, improving data accuracy, productivity, and performance for business applications.



## 1D/2D Barcode Scanner

Powered by Honeywell Adaptus® Imaging Technology, the built-in barcode reader features high quality reading functionality and advanced image capture capabilities. Designed with industry-leading motion tolerance, low light sensitivity, broad depth of reading distances, and tough environmental considerations, it is a quick and easy adoption for point-and-shoot scanning.

| Performance | | | |
|---|---|---|---|
| Focal Point | SR: 7" (17.8cm) from lens plate;<br>SF: 4.5" (11.4cm) from lens plate | Viewing Angle | ± 40°C |
| Ambient Light | Total darkness to 100,000 lux (full sunlight) | Image Sensor | 752 x 480 CMOS sensor |
| **Supported Symbologies** | | | |
| 1D | Code 39, Code 128, Codabar, UPC, EAN, Interleaved 2 of 5, Reduced Space Symbology, Code 93, Codablock | | |
| 2D | PDF417, MicroPDF417, MaxiCode, Data Matrix, QR Code, Aztec, Aztec Mesa, Code 49, UCC Composite | | |
| Others | Postal Codes, OCR Fonts | | |

Integrated with both an 1D/2D barcode scanner and a RFID reader, the upgraded ICEROCK (bar) is the most competitive choice for retailers of all types. From department stores that offer almost everything, to specialty stores that provide particular products, inventory management and control is ultimately the most important issue that retail managers have to face. With the ICEROCK (bar), inventory can be recorded and tracked automatically. It can not only reduce costs associated with human handling (such as error and time) but also allow retailers to improve accuracy, efficiency and profitability.

Inventory Management

Inventory Registry

Inventory Tracking

# System Overview

## *Specifications*

| Model | | ICEROCK |
|---|---|---|
| Display | LCD Size | 8.0" TFT LCD |
| | Brightness (cd/m²) | 350 cd/m² |
| | Max Resolution | 800 x 600 pixels SVGA |
| | Viewing Angle | 70/70/60/70 Deg. |
| System | CPU | Intel® Atom™ Z530 1.6GHz |
| | Chipset | Intel® SCH US15WP |
| | Operating System | Microsoft® Windows® XP Embedded |
| | Memory | 2G DDR2 on board |
| | Storage | CompactFlash® Slot, SD Card Slot |
| Communication | Wireless LAN | Wi-Fi 802.11b/g/n |
| | Bluetooth | Bluetooth® V3.0 + HS (Class II) |
| | Modem | WCDMA/HSUPA (optional) |
| | GPS | by customization |
| Data Collection | Camera | 1.3 megapixels |
| | Barcode | 1D Laser / 2D Imager Scan Engine (Optional) |
| | RFID | 13.56 MHz RFID supports ISO 14443A/B (by customization) |
| Indicators & Buttons | LED Indicators | Power/ Wi-Fi/Bluetooth/HDD/3.75G Status LED |
| | Keys | 5-way navigation key<br>8 x Programmable function keys |
| I/O Interface | USB | 2 x USB 2.0<br>1 x Mini USB Client |
| | LAN | 1 x 10/100/1000 Mbps GbE RJ-45 |
| | Audio | 2 x 1.5W Speaker |
| | | 1 x Mic-in |
| Power | Power Adapter | 12V @ 5A @ 60W |
| | Battery | 7.4 V 2400 mAh Li-ion Battery (Optional 5000mAH) |
| Enviroment | Operating Temperature | 0˚C to +40˚C |
| | Storage Temperature | -20˚C to +60˚C |
| | Humidity | 5%~95% non-condensing |
| | Drop Survival | 1.0 M |
| | Environmental Protection | IP 62 compliant front panel |
| | Certifications | CE/FCC |
| Physical Characteristics | Dimensions (LxWxH) (mm) | 255 x 180 x 37 |
| | Weight | 1.1 kg |



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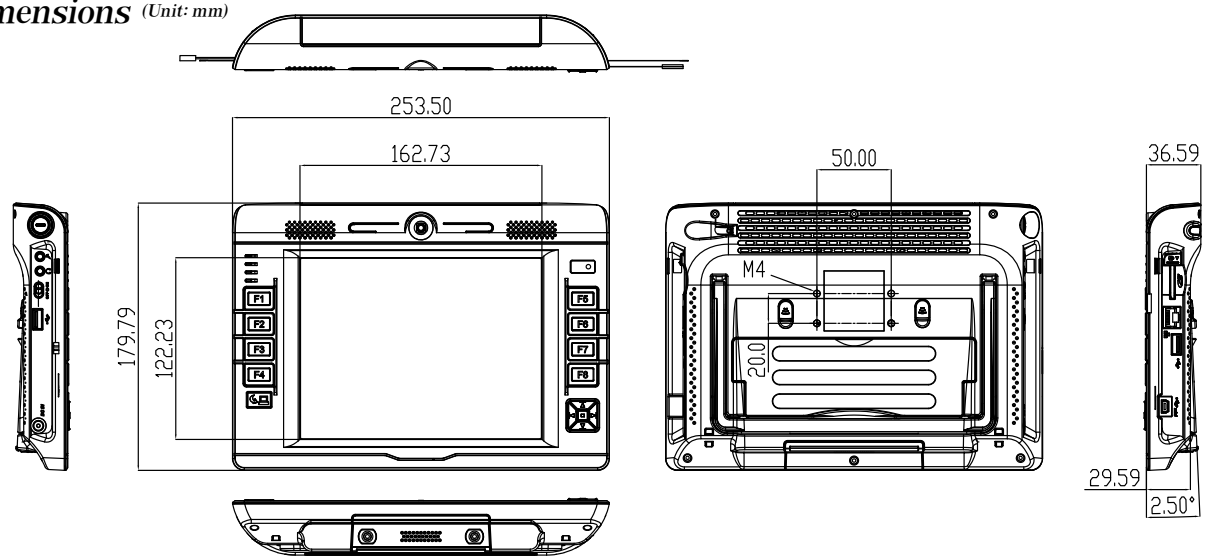
# ICEROCK

## Dimensions (Unit: mm)




## Ordering Information

| Part No. | Description |
|---|---|
| ICEROCK-08A-Z530/WT-R/2G-R12 | 8.0" 350cd/m² SVGA Mobile Panel PC with Intel® Atom™ Z530P 1.6GHz, 802.11 b/g/n Wireless Module, Bluetooth Module, Touch screen, 1.3 Megapixels Camera, 2GB SDRAM,R10, RoHS |
| ICEROCK-08A-WT-R-HU/2G-R12 | 8.0" 350cd/m² SVGA Mobile Panel PC with Intel® Atom™ Z530P 1.6GHz, 802.11b/g/n Wireless Module, Bluetooth Module, Touch screen, 1.3 MegapixelsCamera, 2GB SDRAM, 3.75G Module, RoHS |
| ICEROCK-08A-BAR-2G-R12 | 8.0" 350cd/m² SVGA Mobile Panel PC with Intel® Atom™ Z530P 1.6GHz, 802.11b/g/n Wireless, Bluetooth, RFID, 1D/2D Barcode Scanner, 1.3 Megapixels Camera, 2GB SDRAM, RoHS |
| ICEROCK-08A-BAR-HU/2G-R12 | 8.0" 350cd/m² SVGA Mobile Panel PC with Intel® Atom™ Z530P 1.6GHz, 802.11b/g/n Wireless, Bluetooth, RFID, 1D/2D Barcode Scanner, 1.3 Megapixels Camera, 2GB SDRAM, 3.75G Module, RoHS |

## Packing List

| Item | Part No. | Q'ty |
|---|---|---|
| Battery Pack | 31603-000011-RS | 1 |
| Power Adapter | 63040-010060-030-RS | 1 |
| Power Cord | 32702-000200-100-RS | 1 |
| Stylus | 7Z000-6051D0320101-RS | 1 |
| Plastic Protective Shell | 47003-007600-00-RS | 1 |
| User Manual CD | 7B000-000774-RS | 1 |
| IEI One Key Recovery CD | 7B000-000724-RS | 1 |

## Optional Accessory List

| Item | ICEROCK | Description |
|---|---|---|
| Docking Station | ICEROCKDS-08A-R10 | Docking station with VGA, 5 x USB 2.0, RJ-45, and RS-232 ports for ICEROCK series |
| Battery Pack | 31603-000011-RS | 7.4V 2400 mAh Battery |
| Battery Pack - Large | 31603-000022-RS | 7.4V 5000 mAh Battery |
| Leather Carrying Case | ICEROCKCB-00-R10 | Black, Leather carrying case in black color for ICEROCK-08A series |
| OS Windows® XP Embedded | ICEROCKCF-08-XPE-2GB-R10 | 2 GB CompactFlash® with Windows® XPE OS image and license |
| | ICEROCKCF-08-XPE-4GB-R10 | 4 GB CompactFlash® with Windows® XPE OS image and license |

Stylus

Battery Pack

Docking Station

Battery Pack-Large

Power Adapter

Plastic Protective Shell

Leather Carrying Case

# ICECARE

## Mobile Field Assistant

- 7" 500 cd/m² TFT LCD with projective capacitive touchscreen
- Texas Instruments Sitara ARM Cortex A8 CPU
- Powered by Android 2.3.4 OS
- 1D laser / 2D imager scan engine, HF RFID reader
- Dual Camera :
  2 Megapixels CMOS front camera
  5 Megapixels CMOS rear camera
- Bluetooth, Wi-Fi, 3.5G wireless
- Built-in Ublox GPS with internal antenna
- Dual hot swappable batteries

Cortex Intelligent Processors by ARM

Texas Instruments

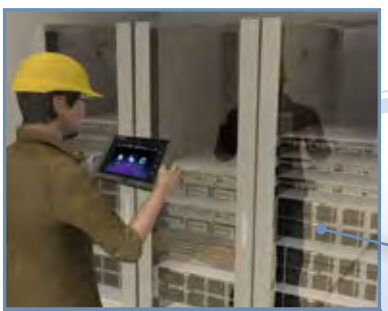
Bluetooth | Wi-Fi | USB 2.0 | GPS | 3.75G/ HSUPA | Camera | Touch Screen | IP64 | 1D Barcode Scanner | 2D Barcode Scanner

# Field Service Application

Increase field service productivity and efficiency with the ICECARE 7" Mobile Field Assistant. This RISC-based tablet PC features TI OMAP3 AM3715 CPU and runs on the Android 2.3.4 OS. Targeted for field service applications, it can be used for:

- Capturing and recording information in real-time
- Determining customers' locations
- Tracking and locating mobile field workers
- Accessing and updating information in real-time

Track and Locate


Capture and Record

Access and Update

Out-field
WWAN
(GPRS/3G/ HSDPA/WiMAX)

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# Power Saving and Trendy Platform

## TI Cortex A8 CPU

- TI's Sitara family of highly-integrated ARM9™ and ARM Cortex™-A8 microprocessor portfolio offers various combinations of high-performance and low power levels, providing the ability to create an array of products using a common hardware and software platform.
- Reduce system risks and accelerate time to market using standard and comprehensive ARM-based software development tools.
- TI is the largest ARM core licensee supporting all major high-level operating systems such as Android and Windows CE.

### Sitara™ offers

**Performance**
- Up to 450MHz ARM9 to 1.5GHz Cortex A8 devices
- Industry's first widely available Cortex-A8 devices - 2DMIPS per MHz
- Graphics acceleration up to 27M polygons/s performance for advanced user interface
- High speed DDR2 and DDR3 memory performance

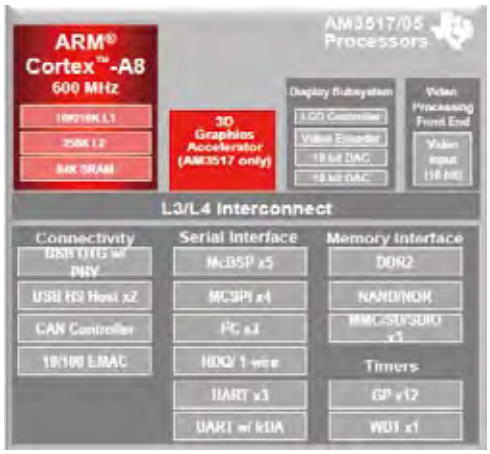
**Connectivity**
- 10/100/1000 Ethernet
- CAN 2.0 and high speed USB interface
- Multiple serial port options per device
- **Cost effective** processor with SATA interface
- Flexible LCD controller for up to 720p displays and moving to 1080p in future devices
- Industrial peripheral support

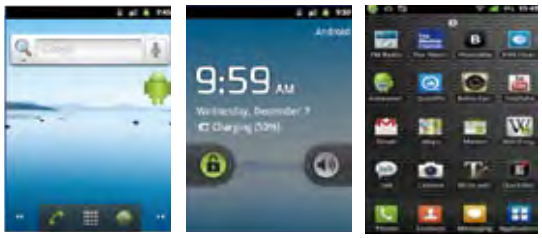
### AM3517/05 Cortex™ -A8 based processors

**Benefit**
- Support OS such as Linux, Win CE, RTOS
- 10M polygons/second for robust GUIs
- Multi windows overlay for hardware accelerated user

**Power**
- Total Power: L700mW
- Standby Power: 12mW

**Suggested Application**
- Industrial/Home automation
- Point of service






## Android 2.3.4 Operating System

- Android is an operating system for mobile devices such as smartphones and tablet computers. It is developed by the Open Handset Alliance led by Google.
- Android was listed as the best-selling smartphone platform worldwide in Q4 2010 by Canalys with over 200 million Android devices in use by November 2011.
- 2.3 Gingerbread refined the user interface, improved the soft keyboard and copy/paste features, improved gaming performance, added SIP support (VoIP calls), and added support for Near Field Communication.

Android Security Issue:
Android applications run in a sandbox, an isolated area of the operating system that does not have access to the rest of the system's resources, unless access permissions are granted by the user when the application is installed. Before installing an application, Android Market displays all required permissions.

# Seamless Wireless Communication

The ICECARE keeps mobile workers connected with the back-office and peripherals through built-in 3.5G, Wi-Fi, and Bluetooth wireless technologies.

## Local-Area Communication

Wi-Fi

Compliant with the 802.11 b/g/n. This feature allows fast data transfer for near field or ad-hoc data communication.

## Wide-Area Mobile Communication

3.5G/ HSUPA

With up to 3.5G wireless technology, outfield workers can maintain and share constant contact with the back office.

## Peripheral Communication

Bluetooth

Compliant with the Bluetooth 2.1+EDR specification. This feature ensures easy and quick access to nearby peripherals.

## Built-in Navigation Grade GPS module

GPS

GPS is a mature technology that allows users to locate their current location and other landmarks. Navigation and Positioning support

# Advanced Data Collection Technology

## 2 Megapixels CMOS Camera

The optional 2 megapixels CMOS front camera functions as a web camera allowing field technicians to communicate face-to-face with the staffs in the office and other parties while on the move.

## 13.56 MHz RFID Reader

Support Read/Write, ISO 14443A (Mifare), ISO 14443B (Felica), ISO 15693. Support NFC Read/Write and peer-to-peer communication.

## 5 Megapixels CMOS Camera

The 5 megapixels CMOS rear camera can be used to capture environmental information while field technicians are performing services.

## 1D Laser / 2D Imager Scan Engine

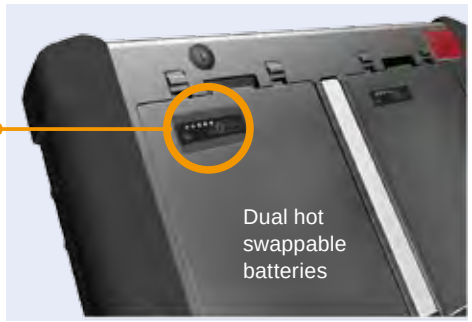
The variety of barcode symbologies supported by the 1D laser / 2D imager scan engine allows easy and fast data capture, and thereby optimize work efficiency.

# Efficient Power Management

The ICECARE comes along with two battery packs that provides 11.1V 1880mAh capacity and support hot swappable function. When one battery is removed, the system automatically switches power consumption to the other battery. This design is beneficial for mobile field workers because:

- When power is running low, the batteries can be replaced with fully charged ones without shutting down the system and applications.
- With an additional battery pack, the device can operate for hours to ensure non-stop customer service.

Each battery pack has capacity indicators showing remaining power.



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# Rugged Design

Designed specifically for out-field applications, the ICECARE has been tested and approved for its semi-ruggedness.

## IP 64 Rating

Dust tight and protected against water splashed against the component from any direction

## Operating Temperature -10°C ~ 40°C

It can be operated under a wide range of temperatures

## 1.2M Drop Test

Passed the 1.2M drop test on all sides 26 times

## Storage Temperature -10°C ~ 60°C

It can be stored under extreme temperatures

A black protective rubber surrounds three sides of the ICECARE, giving it the protection it needs in harsh work environments.

The metal stand is designed to support and stabilize the device on the work surface.

## How Tough is Rugged?

Mobile computing devices, namely tablet PCs and industrial PDAs, are becoming increasingly popular for out-field use. Their versatility makes them useful in public safety and field service applications. However, popular consumer tablets or handhelds are not designed to meet outdoor use, especially where the environment is tough. They are not designed to work in the rain, or extreme hot or cold temperatures, or in areas where dust and dirt could interfere with the device. For these environments, tougher devices are required – those that meet the “rugged” standard.

So, what defines “rugged”? From the user’s perspective, rugged refers to the device’s ability to operate in the work environment that it is exposed to. However, different users work in different environments. Hence, rugged means something slightly different from one user to the other. For example, a tablet PC used in a warehouse will be more likely exposed to dust and drops, but will less likely be used in extreme temperatures. To meet the needs of all possible users, the industry has agreed upon a general a set of standards to test for a device’s ruggedness. These standards include tests for: extreme operating and storage temperatures, Ingress Protection (IP Grade) as well as drop survival.

The ICECARE Mobile Field Assistant is compliant with IP 64 grade protection and has been tested with 1.2M drop tests on all sides of the device. It also features wide operating and storage temperature ranges. Taken these together, the ICECARE complies with the “rugged” standard and ensures stable operation under tough environments.

**Drop Survival**
Protection against accidental drops.

**IP Grade**
Protection against dust and water splash.

**Operating Temperature**
Protection against extreme temperatures.

# Specifications

| Model | ICECARE | |
|---|---|---|
| Display | LCD Size | 7" TFT LCD |
| | Brightness (cd/m²) | 500 cd/m² |
| | Max Resolution | 800 (H) x 480 (V) |
| | Viewing Angle | 60/70/70/70 Deg. |
| | Touch Screen | Projective capacitive type |
| System | CPU | TI Sitara AM3715 |
| | OS | Android 2.3.4 |
| | Memory | 4GB eMMC Flash + 512MB SDRAM |
| | Storage | SD Slot |
| Communication | Wireless LAN | Wi-Fi 802.11 b/g/n |
| | Bluetooth | Bluetooth 2.1+EDR |
| | Modem | HSUPA/GPRS/GSM |
| | GPS | GPS with internal antenna |
| | RFID | HF RFID<br>ISO 14443A(Mifare)<br>ISO 14443B(Felica)<br>ISO 15693<br>NFC |
| Data Collection | Barcode | 1D laser/2D imager scan engine |
| | Camera (Back) | 5 megapixels CMOS camera |
| | Camera (Front) | 2 megapixels CMOS camera |

| | | |
|---|---|---|
| Indicators & Buttons | LED Indicators | Charging Status LED (Orange / Green) |
| | | Wi-Fi enable / disable LED (Green) |
| | | BT enable / disable LED (Blue) |
| | | 3.5G enable / disable LED (Green) |
| | Keys | Power on/off switch |
| | | Reset Key |
| | | 4 x Function key<br>(Home / Menu / Back / Search) |
| I/O Interface | Audio | 1 x Headset |
| | | 1 x 1.5W speaker |
| | | 1 x Digital Mic |
| | Expansion | 2 x USB 2.0 |
| | | 1 x DC Jack |
| | Docking<br>(Support Wall Mount) | 1 x Ethernet 10/100M |
| | | 1 x Full Function RS-232 |
| | | 1 x 1.5W speaker |
| | | 2 x USB 2.0 |
| | | 1 x DC Jack |
| Power | Power Adapter | 19V @ 2.1A @ 40W |
| | Battery | Dual 11.1V 1880mAh Li-ion battery |
| Environment | Operating Temperature | -10°C ~ 40°C |
| | Storage Temperature | -10°C ~ 60°C |
| | Humidity | 5%~95% non-condensing |
| | Drop Survival | 1.2 M |
| | Environment Protection | IP64 |
| | Certification | CE / FCC |
| Physical Characteristics | Dimensions (LxWxH) (mm) | 248 x 153 x 36 |
| | Weight | 0.95 kg |

# Ordering Information

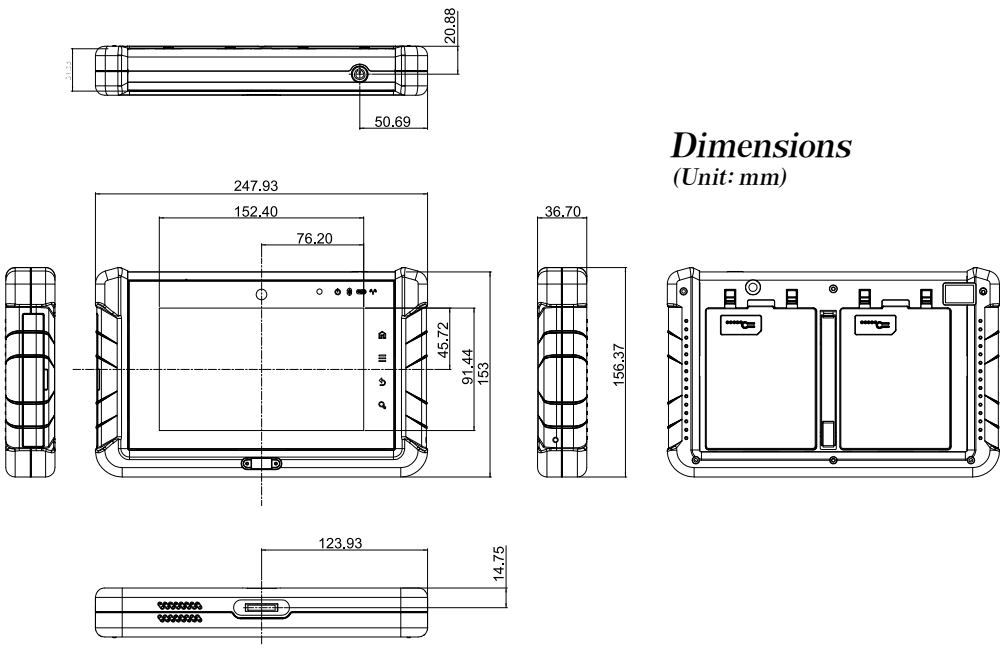
| Part No. | Description |
|---|---|
| ICECARE-07-R10 | 7" TFT-LCD industrial tablet with TI Sitara AM3715 CPU, HSUPA/GPRS/GSM, WiFi/Bluetooth, GPS, RFID, 2D/1D barcode, 2M/5M Camera, Android 2.3 OS, RoHS |
| ICECARE-07-1D-R10 | 7" TFT-LCD industrial tablet with TI Sitara AM3715 CPU, WiFi/Bluetooth, 1D barcode, 2M/5M Camera, Android 2.3 OS, RoHS |

# Packing List

| Item | Part No. | Q'ty |
|---|---|---|
| Battery Pack | 31603-000016-RS | 1 |
| Power Adapter | 63040-290040-000-RS | 1 |

# Model Variations

| Part No. | WiFi | Bluetooth | Modem | GPS | Barcode | RFID |
|---|---|---|---|---|---|---|
| ICECARE-07-R10 | 802.11 b/g/n | Ver 2.1 +EDR | HSUPA/GPRS/GSM | GPS | 1D/2D | HF RFID |
| ICECARE-07-1D-R10 | 802.11 b/g/n | Ver 2.1 +EDR | N/A | N/A | 1D | N/A |




## Dimensions
*(Unit: mm)*

# Industrial PDA (EDA)

# Industrial PDA (EDA)

## Mobile Revolution in the Workplace

The world is in the midst of a mobile revolution with the rapid consumer uptake and adoption of smartphones. Its year-on-year growth rate in the third quarter of 2010 nearly doubled at 96 percent; while sales of mobile phones only rose by 35 percent according to Gartner research group. As smartphones are rapidly becoming an integral part of a consumer's digital life, a demanding tech-savvy public is beginning to seek a more interactive and engaging mobile device experience in the workplace. Mobile integration in the workplace means devices with features such as operating systems that support sophisticated applications, text messaging, Internet and email access, document viewing, touch screen interface, built-in cameras, GPS navigation software, barcode readers, and wireless connectivity.

PDAs and smartphones often develop in tandem, with data-centric PDAs taking on more voice-centric aspects, and smartphones including features previously limited to PDAs. As the line between PDAs and smartphones keeps blurring, there is concern that smartphones will eventually replace PDAs, just as they have begun to make traditional mobile phones seem obsolete. This may be true in the consumer sector where convenience trumps all and a dialed-down system requirement would suffice for everyday use.

In the business sector, however, industrial PDAs are riding the wave of the smartphone-led mobile revolution and enjoying what the growing smartphone ecosystem has to offer. They benefit greatly from the advances and mass popularization of consumer handheld technologies, such as RFID, high quality scanners and integrated high resolution cameras. Rather than being peripherals, these technologies have become powerful, small, and reliable enough to be integrated into industrial PDAs, offering a cost-effective all-in-one solution for business travelers and professionals who are constantly on the move.

Moreover, the more ubiquitous, affordable and versatile wireless technology becomes, the easier it is for PDAs to synchronize and update information anytime anywhere. In essence the PDA has become miniature mobile business portal.With this increased mobility, employees can feel empowered to initiate changes and go after new projects. In this way, Industrial PDAs serve as a catalyst for reform in the workplace, promoting innovation and flexibility.

For field force workers that require the ability to access and forward data where it is needed most, a data-centric PDA packaged in tough, rugged shell is perfect for the job at hand. Many businesses and government organizations often rely on rugged PDAs, or enterprise digital assistants (EDAs), for mobile data applications. EDAs often have extra features such as data capture, barcode readers, radio-frequency identification (RFID) readers, magnetic stripe card readers, or smart card readers. The ability of industrial PDAs to enable work in different environments and for different purposes allows businesses to go beyond traditional computing and information seeking infrastructures, enhancing workflow and productivity.

Businesses in the hospitality industry face a highly competitive environment in which differentiation and innovative customer experiences are critical in improving sales and revenue. Wireless access to a centralized hospitality management system facilitates efficient handling of client requests for information and services as well as better execution of loyalty programs. Offering High-impact individualized service is made easier with on-demand retrieval of client information and purchase records. Time and energy saved by utilizing an industrial PDA can then be used to provide more personalized service with the customers, effectively increase revenues through improved customer satisfaction.

We here at IEIMobile are excited about the future of industrial PDAs. A major initiative has launched with our upcoming product line to harness the mobile revolution in the workplace as a key component of our industry wide development agenda.

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# Seamless Wireless Network Roaming

We all appreciate the freedom and mobility afforded by the cell phone, as well as the economy and security of using the company's WLAN to download data or talk via a VoIP-based telephone system at the office. Since the advent of mobile devices that support multiple connectivity options, "seamless wireless network roaming" is now poised to become a reality with a single mobile device that can provide wide area connections via GPRS or CDMA, WLAN connections via 802.11b, plus connectivity to Bluetooth and wired Ethernet. In addition, a user's mobile device can switch from a cellular carrier's wireless network to a company's WLAN automatically at the right time, every time without dropped calls.

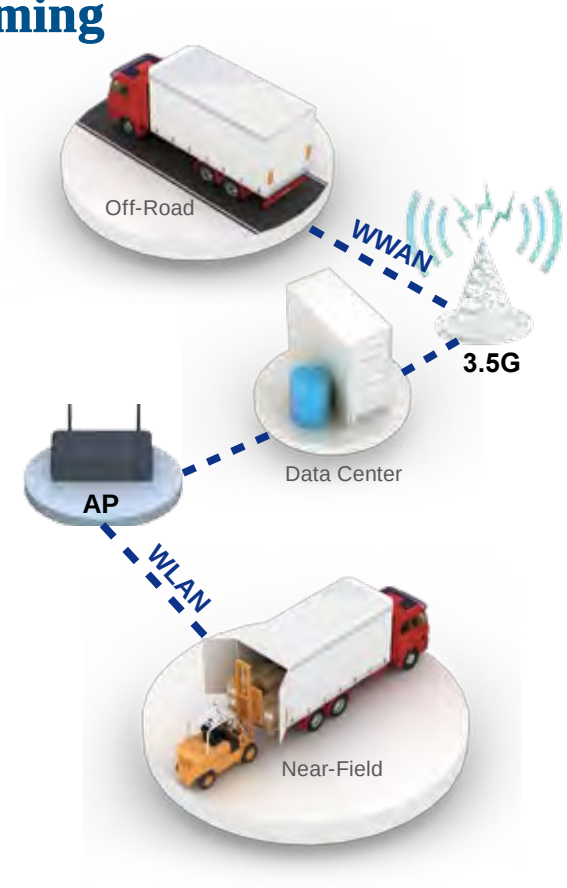
Just consider these working scenarios:

Data roaming makes it possible for a delivery and logistics company to move from the warehouse (WLAN) to the delivery route (WWAN) without any intervention or interruption. It is common practice for router drivers to check out their loads before leaving the facility since they are liable for losses and damages to the products on their vehicles.

Making the latest updates for a specific product or procedure available for repair workers has never been easier with data roaming. Using a single device that functions as both a phone and a data storage center, service personnel can obtain updates through WWAN and/or WLAN connections (depending upon the urgency) regarding product sales information and repair manuals. As updates are accessed on an "as-needed" basis, unnecessary documentation will no longer take up valuable storage space.

Data roaming enables delivery drivers to log real-time job progress via WWAN connections back to headquarters. They also have the choice to upload more detailed information (in larger files) near public hot spot locations such as hotels, fast food restaurants or coffee shops. The device can detect the availability of a faster connection and automatically switch to WLAN, without any operator intervention.

Most of IEIMobile products are equipped with both Wireless LAN and GPRS/WCDMA modules. This combined with powerful embedded operating system support, provides a seamless wireless communication experience.




# Industrial Wi-Fi

Wi-Fi has become a popular choice for connecting industrial devices. It is a well-established, mature technology that offers close integration with existing Ethernet networks. However, the issues that face an industrial mobile application are quite different from the issues encountered in a typical office or commercial application.

**Power saving**

By adopting a mobile Wi-Fi solution and modifying the Wi-Fi driver, IEIMobile products support power saving mode. This saves battery power while the mobile device is in suspend mode and Wi-Fi communication is in idle mode.

**Auto-connecting to existing wireless LAN**

Whenever an IEIMobile device boots up, it automatically connects to the best signaling access point which has been pre-configured and registered in a list of Wi-Fi connection points.

**Roaming**

When moving from one access point zone to anotherin a wireless LAN consisting of typical commercial access points, the IEIMobile optimized Wi-Fi solution ensures re-connection to new access point in 20 seconds the once original access point has disconnected. This 20-second re-connection time is compliant with Microsoft® and Wi-Fi roaming certifications. IEIMobile's optimized Wi-Fi driver ensures that data transmission will be resumed after re-connection.

**Seamless roaming and auto-switching**

While roaming in an enterprise wireless LAN or a wireless LAN server like Cisco, IEIMobile devices are compliant with wireless network servers. This allows our devices to automatically switch to the AP with the strongest signal without data loss or interruption--a completely seamless transition.

# Windows® Embedded Handheld 6.5

Windows® Embedded Handheld is an operating system designed for use in mobile and handheld devices such as smartphones. Part of the Windows CE family, it can be seen as a scaled down version of the desktop Windows Operating System. It offers a similar Windows experience on small mobile devices.

**Emphasis on Touch Control**

Windows® Embedded Handheld 6.5 was introduced in February 2009. Carrying popular applications such as Microsoft® Office, Windows Media Player, Internet Explorer and Outlook mail client, it featured a revamped, touch-optimized user interface.

**Cloud-Based Service Integration**

It also offered a free on-line backup and cloud-syncing service called “My Phone.” Using “My Phone” service to link with Windows Live ID, Windows® Embedded Handheld users can sync contacts, calendar entries, text messages, videos, photos, music, e-mails, documents and more with the Cloud, so that data is backed up and available online. In essence, this functionality allows information to be synchronized across multiple connected devices, ideal for business users on the move.

Direct access to “Windows Marketplace” --- Microsoft®’s mobile app store --- is another key feature of Windows® Embedded Handheld 6.5. The vast array of third-party software available for Windows® Embedded Handheld devices has long been one of Windows® Embedded Handheld's greatest strengths, Now getting the right software is easier than ever With the launch of “Windows Marketplace,” Microsoft® provides a single location for software developers to offer their applications. Users can browse, purchase, download and install Windows® Embedded Handheld software from the convenience of their handset.

**Focus On Enterprise Market**

Windows® Embedded Handheld has a long history dating back over 10 years, fostering a well-supported ecosystem. There are two major advantages it has over other Mobile OSs on the market today:

*Quick and easy adoption : With a traditional PC look-and-feel, user doesn’t have to readjust their work habits or take lessons to familiarize themselves with new applications.

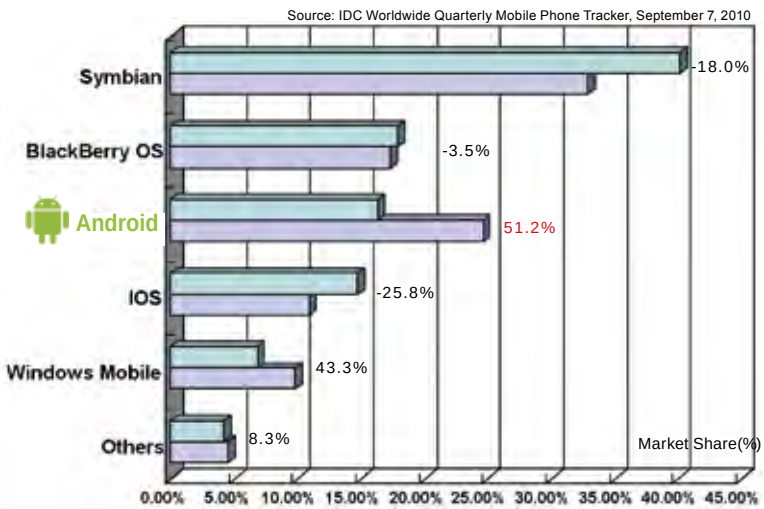
*Hassle-free integration : For businesses with legacy infrastructure and systems, failure to address issues of application compatibility will result in more than just a loss of productivity and overhead. The inability to leverage existing system know-how, device management expertise and security solutions spells even more trouble for businesses. Whether on the desktop, or in the server room, Microsoft®’s line-up of embedded operating systems is everywhere. Windows® Embedded Handheld, therefore, becomes the apparent mission critical, industrial-strength integration solution.

Microsoft® unveiled plans for Windows Phone 7 in February 2010, targeting the smartphone OS market. Windows Embedded Handheld was announced later in June with a focus on enterprise applications. IEIMobile is closely following the guidelines laid out by Microsoft®’s Mobile OS Roadmap and fully prepared to offer on-demand software hardware upgrade support.

# IEIMobile to Support Android

- Android is an open-source software stack for mobile devices, and a corresponding open-source project led by Google.
- Android's purpose is to establish an open platform for developers to build innovative mobile apps. Three key components work together to realize this platform.
  - The Android Compatibility Program defines the technical details of the Android platform and provides tools used by OEMs to ensure that developer apps run on a variety of devices.
  - The Android SDK provides built-in tools for developers to specify which device features their apps require.
  - With a pre-installed app called “Market,” users can browse and download available third-party apps directly from the Android Market.
- Different Android devices run different versions of the Android platform, meaning each version has different hardware requirements. It is IEIMobile’s mission to adopt a “best-fit” approach, and ensure compatibility between hardware capabilities and Android platform version. We are also committed to providing complete SDKs for industries to develop their OEM field application softwares. In addition to providing Android device ODM services, IEIMobile is developing a series of own-brand products which combine a potent version of Android with powerful hardware to be available soon.

## Worldwide Mobile OS Market Share




| Others | Windows Mobile | IOS | Android | BlackBerry OS | Symbian |
|---|---|---|---|---|---|
| 4.20% | 6.80% | 14.70% | 16.30% | 17.90% | 40.10% |
| 4.50% | 9.80% | 10.90% | 24.60% | 17.30% | 32.90% |

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# Industrial PDA (EDA)

| Model | | MODAT-100 | MODAT-200 | MODAT-328 | MODAT-335 |
|---|---|---|---|---|---|
| Display | LCD Size | 3.5" TFT LCD (Sunlight Readable) | 3.5" TFT LCD (Sunlight Readable) | 2.8" TFT LCD | 3.5" TFT LCD (Sunlight Readable) |
| | Brightness (cd/m²) | 190 cd/m² | 250 cd/m² | 240 cd/m² | 190 cd/m² |
| | Max Resolution | 240(H) x 320(V) QVGA | 240(H) x 320(V) QVGA | 240(H) x 320(V) QVGA | 240(H) x 320(V) QVGA |
| | Viewing Angle | 80/80/80/80 Deg. | 80/80/80/80 Deg. | 70/50/70/70 Deg. | 80/80/80/80 Deg. |
| | Touch Screen | 4-wire resistive type touch | 4-wire resistive type touch | 4-wire resistive type touch | 4-wire resistive type touch |
| System | CPU | Marvell® PXA 310 624MHz | Samsung® 6410 ARM11 667MHz | Marvell® PXA 310 624MHz | Marvell® PXA 310 624MHz (Windows Embedded Handheld 6.5) or TI Sitara AM3715 (Android 2.3.4) |
| | Operating System | Microsof® Windows® Embedded Handheld 6.5 | Microsof® Windows® Mobile 6.5 | Windows® Embedded Handheld 6.5 | Windows® Embedded Handheld 6.5 or Android 2.3.4 |
| | Memory | 128MB Flash + 256MB SDRAM | 128MB Flash + 128MB SDRAM | 256MB Flash + 128 MB SDRAM | 256MB Flash + 256MB SDRAM |
| | Storage | microSD Slot | microSD Slot | microSD Slot | microSD Slot |
| Communication | Wi-Fi | Wi-Fi 802.11 b/g | Wi-Fi 802.11b/g | Wi-Fi 802.11 b/g | Wi-Fi 802.11 b/g/n |
| | Bluetooth | Bluetooth 2.1 + EDR | Bluetooth 2.1 + EDR | Bluetooth 2.1 + EDR | Bluetooth 2.1+ EDR |
| | Modem | WCDMA/HSDPA | N/A | N/A | WCDMA/HSDPA or GPRS |
| | GPS | GPS w/internal antenna | N/A | N/A | GPS w/internal antenna |
| Data Collection | RFID | 13.56 MHz RFID support<br>ISO 14443A (Mifare)<br>ISO 14443B (Felica)<br>ISO 15693<br>ISO 18092 NFC | N/A | 13.56 MHz RFID support<br>ISO 14443A (Mifare)<br>ISO 14443B (Felica)<br>ISO 15693<br>ISO 18092 NFC | 13.56 MHz RFID support ISO 15693 and ISO 14443A/B compliant<br>UHF (optional): EPC Global Class1 Gen2 support ISO/IEC 18000-6 Type C and at least 1m reading distance |
| | Barcode | 1D Laser Scan Engine | N/A | 1D/2D imager scan engine | 1D/2D imager scan engine |
| | Camera | 3 megapixels CMOS camera with LED flash light | N/A | 3 megapixels CMOS camera with LED flash light | 3 megapixels CMOS camera with LED flash light |
| Indicators & Buttons | LED Indicators | Charging status LED<br>HSDPA status LED | System/Battery charging status LED<br>Wi-Fi/Bluetooth enable/disable LED | Charging status LED<br>Wi-Fi / Bluetooth enable/disable LED | Charging status LED<br>Wi-Fi enable/disable LED<br>3.5G/2.5G enable/disable LED |
| | Hot Keys | 2 x Barcode key | 1 x Rollng Key | 2 x Barcode key<br>1 x Camera key | 2 x Barcode key<br>1 x Camera key |
| I/O Interface | Audio | 1 x Speaker | 1 x Speaker | 1 x Speaker | 1 x Speaker |
| | | 1 x Headset / Built-in Mic-in | 1 x Headset / Built-in Mic-in | 1 x Headset / Built-in Mic-in | 1 x Headset / Built-in Mic-in |
| | Expansion | 16-pin connector (RS232 / battery charging / USB Host / USB Client) | 1 x Mini USB Host 1.1/Client | 1 x Mini USB Client 2.0 | 1 x Mini USB Client 2.0 |
| | | 2" thermal printer | N/A | 16-pin connector (RS-232 / battery charging / USB Host / USB Client) | 16-pin connector (RS-232 / battery charging / USB Host / USB Client) |
| | | smart card reader support | N/A | N/A | N/A |
| | | Magnetic Stripe Reader Support | N/A | N/A | N/A |
| Power | Power Adapter | Input: VAC:100V ~ 240V<br>Output: 12V/3A | Input: 100 V AC to 240 V AC ~ 50-60Hz 0.2A<br>Output: 5V / 1A | Input: 100V AC to 240V AC ~ 50-60Hz 0.2A<br>Output: 5V / 2.1A | Input: 100V AC to 240V AC ~ 50-60Hz 0.2A<br>Output : 5V / 2.1A |
| | Battery | 7.4V 1880 mAh battery | 3.7V 1800 mAh battery (built-in non swappable) | 3.7V 1880 mAh battery | 3.7V 3000 mAh battery |
| Enviroment | Operating Temperature | 0˚C ~ 50˚C | -10˚C ~ 50˚C | -10˚C ~ 50˚C | -10˚C ~ 50˚C |
| | Storage Temperature | -20˚C ~ 70˚C | -20˚C ~ 70˚C | -20˚C ~ 60˚C | -20˚C ~ 60˚C |
| | Humidity | 5%~95% non-condensing | 5%~95% non-condensing | 5%~95% non-condensing | 5%~90% non-condensing |
| | Drop Survival | 1.2M | 1.2M | 1.5M | 1.5M |
| | Environmental Protection | IP 54 (Front Panel Only) | IP 54 | IP 54 (Front Panel Only) | IP 54 |
| | Certification | CE / FCC | CE / FCC / BSMI | CE / FCC | CE / FCC |
| Physical Characteristics | Dimensions (LxWxH) (mm) | 230 x 84 x 54 | 125 x 74 x 18.7 | 172 x 55 x 31 | 218 x 81 x 46 |
| | Weight | 546 g | 200 g | 245 g | 405 g |

# MODAT-100

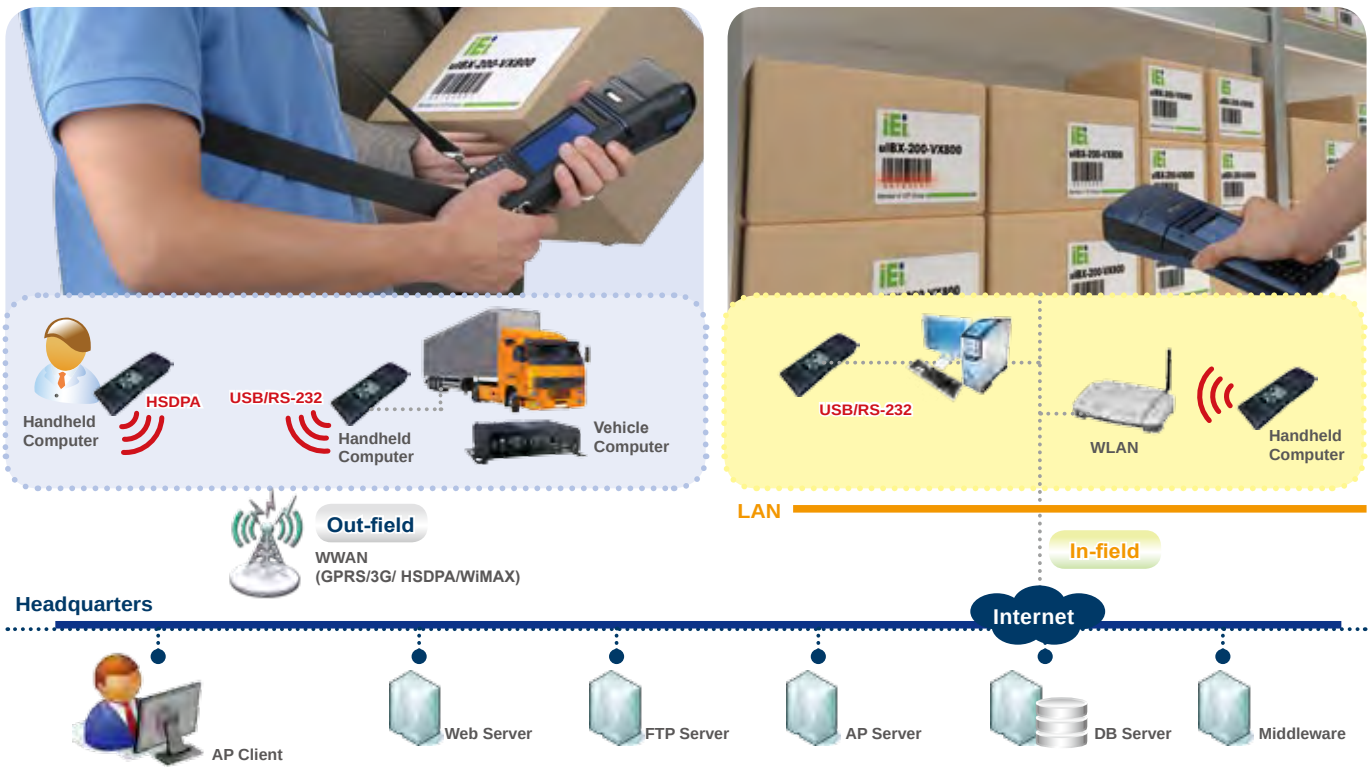
## Mobile POS Terminal

- 3.5” TFT sunlight readable LCD touch screen
- Marvell® PXA 310 624 MHz CPU
- Windows® Embedded Handheld 6.5 pre-installed
- Built-in 32-channel GPS Receiver
- Built-in Smart Card Reader, Magnetic Stripe Card Reader and 2” thermal printer
- 1D laser barcode/Optional 2D Imager barcode reader for data collection
- Bluetooth, Wi-Fi and 3.5G/HSDPA wireless communication

3.5G/ HSDPA | Bluetooth | Wi-Fi | Camera | Printer | RS-232 | USB 2.0 | Barcode Scanner | SCR | MSR | Windows Embedded Handheld

## Point-of-Service Application

Standard Point-of-Service(POS) features, such as smart card readers, magnetic stripe card readers and thermal printers come integrated for an all-in-one mobile solution. Equipped with 1D laser barcode and 3 megapixels camera, the MODAT-100 can capture data and images via a built-in high performance wireless communication module. The MODAT-100 offers mobility and flexibility that promises to streamline workflow and enhance productivity.





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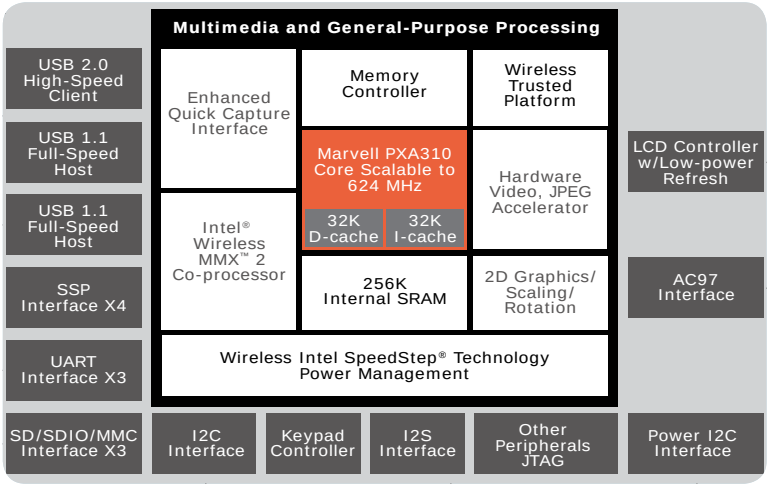
# High Performance Low Power Consumption Platform

## Marvell PXA 310

- Wireless Intel® SpeedStep® technology for MIPS/mW power efficiency, long battery life
- Hardware security/DRM processing
- Enhanced peripheral speeds and features such as support for camera sensors up to 5 megapixels and Bluetooth v2.0 EDR
- Supports DDR SDRAM for cost-effective memory solutions
- Secure devices from boot-up to corporate network access




## Built-in Windows® Embedded Handheld 6.5

- Windows® Embedded Handheld (WM) is a compact mobile operating system developed by Microsoft® and designed for use in smart phones and mobile devices.
- IEIMobile Enterprise PDA Series adopts Windows® Embedded Handheld 6.5 to meet the needs of your mobile workforce.

### Windows® Embedded Handheld Application Development

- **Only One Official IDE**
  Microsoft® Visual Studio 2005/2008/2010

- **Managed Code**
  Intermediate Language
  Just-In-Time (JIT) compilation: Run time translated to machine code (Native Code) by CLR (Common Language Runtime) which comes pre-installed and optimized in each Windows® Embedded Handheld device
  .NET Compact Framework
  -Visual Basic .NET, Visual C# .NET
  -BCL (Base Class Libraries)

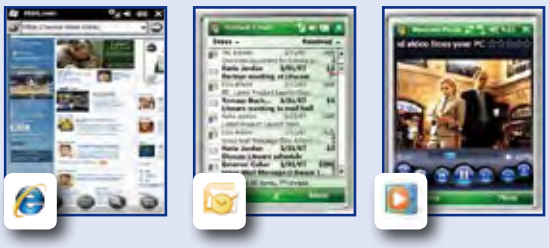
- **Native Code**
  Machine code
  C++
  MFC, ATL, WTL, STL

### Internet Download

- **Windows Marketplace for Mobile (http://www.windowsmarketplace.com)**

### Built-in Application

- Internet Explorer Mobile
- Microsoft® Office Outlook Mobile
- Windows Media Player Mobile



- Optional Microsoft® Office for Mobile is programmable and fully compatible with desktop Windows Office.

Optional Microsoft® SQL Server Mobile Edition is the leading industry standard DBMS and compatible with desktop PCs or back-end ERP systems, which saves you the effort and time of building a new ERP system.

# Rugged Compact Design Suitable for Outdoor Use

The MODAT-100 features a sunlight readable panel for daytime use and an LED backlight for nighttime use. Its rugged design is drop-tested at 1.2 M and IP rated at 54. It can also function in a wide range of temperatures.

## Sunlight Readable- 3.5" TFT LCD with LED backlight

- 3.5'' diagonal with resolution of 240x320
- 6-bit 262,144 color display capability
- Long life & high brightness LED back-light improved outdoor readability
- Blanview TFT-LCD Resistive touch input

## 1.2 M Drop Test

- The average height at which people drop handheld products is 1.2 M
- Drop test passed 26 times. Guaranteed sturdy design

## Operating Temperature 0°C ~ 50°C

Operate under extreme temperatures, in the warehouse or out in desert .

## Storage Temperature -20°C ~ 70°C

Can be stored under extreme temperature conditions

# Seamless / Wireless Communication

Out on the field, the MODAT-100 keeps you connected via a built-in 3.5 G modem and a 802.11 b/g wireless LAN module. Empowered by advanced wireless technology, field workers can easily connect with back-offices to verify work orders, transmit field reports and retrieve necessary data and updated information.

## Local-Area Communication

It gives you up to broadband-speed browsing and connectivity, compared to traditional wired LAN. Best for near field or ad-hoc data communications.

- Compliant with IEEE 802.11b/g
- Auto fallback optimal data rate
- Security : WPA/WPA2, 802.11i AES /CCMP, WEP with TKIP
- Hardware signaling BT/Wi-Fi co-existence supported

## Peripheral Communication

- Compliant with Bluetooth specification V1.2.
- Profile : SPP, HFP, HSP
- Up to 1 Mbps data transfer rate and 10 M distance

## Wide-Area Mobile Communication

- UMTS/HSDPA: Triple band, 850//1900/2100 MHz
- GSM/GPRS/EDGE: Quad band, 850/900/1800/1900 MHz

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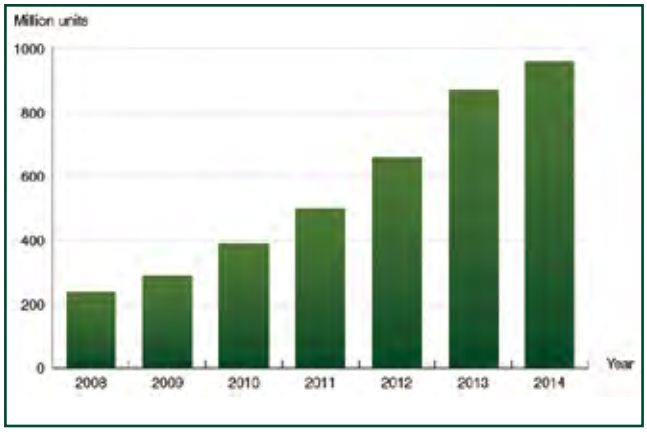
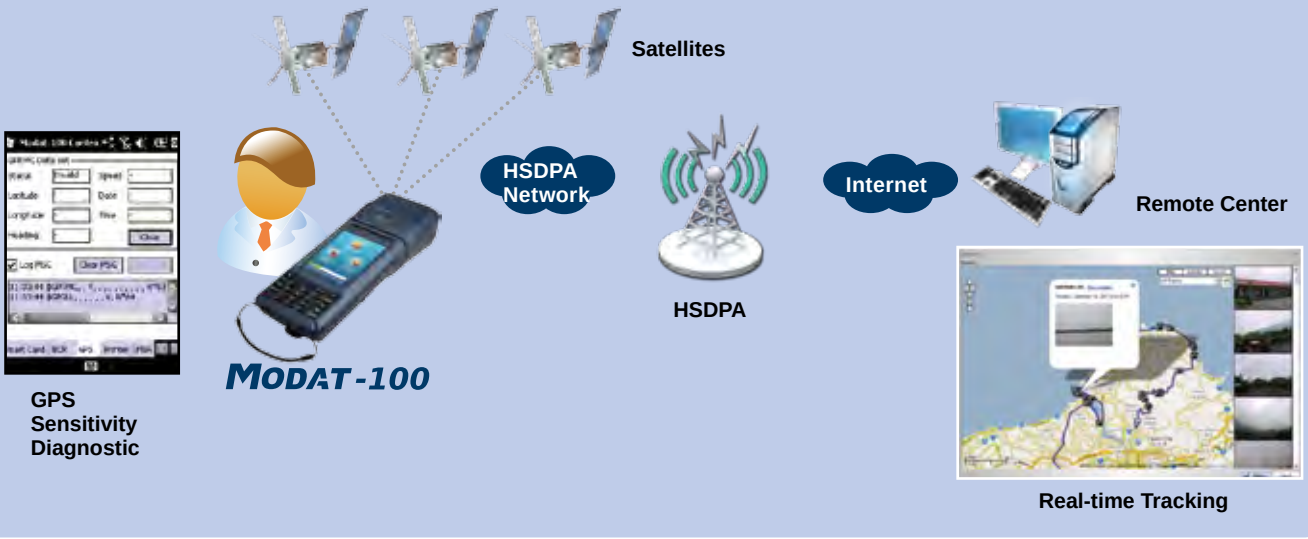
# Built-in GPS

GPS technology for handsets has matured, offering much better performance in terms of sensitivity, power consumption, size and price. Sales of GPS-enabled GSM/WCDMA handsets grew to an estimated 150 million units in 2009, up from 78 million devices in 2008. And the forecast for shipments of GPS-enabled GSM/WCDMA/LTE handsets will grow to 770 million units in 2014. Equipped with GPS and GSM/WCDMA features, the MODAT-100 is an ideal industrial mobile electronics devices for Location-Based Services (LBS).




### Features

- A 32-channel acquisition engine with over 1 million effective correlates is capable of massive parallel searches
- A-GPS: Supports AssistNow Online and Offline, OMA SUPL compliantTime To First Fix (TTFF): < 1 sec
- Best-in-class acquisition and tracking sensitivity
- GPS Sensitivity Diagnostic Utility




# Highly Integrated Mobile Point-Of-Service Design

Most Enterprise PDAs only come with Bluetooth, Wi-Fi or 3G. The MODAT-100 not only has a built-in wireless communication function, it also has integrated peripherals serving as your all-in-one Point-of-Service mobile assistant. The MODAT-100 increases the mobility of your field force.

Highly integrated

# Hybrid Card Reader

## • Smart Card Reader

| |
|---|
| EMV V4.1 Level 1 Compliant |
| Supports ISO 7816 T=0, T=1 Smart Card. (Supports commonly used memory card.) |
| Card Interface ISO 7816 part 1,2 and 3 Compliant |
| Card Interface Communication Speed up to 115200 bps |

## • Magnetic Stripe Reader

| |
|---|
| EIA/TIA-232 Compliant |
| Card Speed 3 to 60 in/s (7.6 to 152.4 cm/s) Reads single, dual or triple track |
| ISO 7811 Conformance (AGC (Automatic Gain Control) – Reads cards from 30% - 200% of ISO 7811 amplitude standard) |
| 9600 bps, 8 Data Bits, No Parity, 1 Stop Bit |

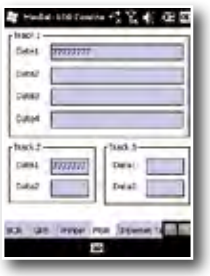
## IEIMobile MODAT-100 Utility-SCR and MSR Diagnostic Software

### Payment System -SCR

SCR diagnostic software allows the user to initiate insert/remove sequences and perform read/write function tests all in one UI screen. During testing, current card reader and processing commands/ responses are displayed.

### Membership Control -MSR

Track 1 and Track 2 data such as credit card holder name, account number of the bank, expiration date or service code can be displayed on the UI screen simultaneously.



# Built-in 2'' Thermal Printer

**• Easy to load**
Our original plate removal mechanism improves paper loading and maintenance.

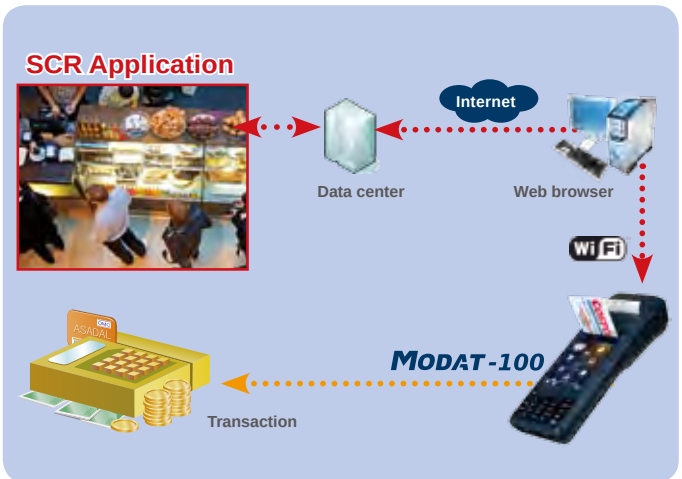
**• Ultra compact**
The 2-inch model measures 15.5 mm high, 70.3 mm wide, and 33.0 mm deep.

**• High speed printing**
Prints up to 60 mm/s (480 dot lines/s) using Fujitsu's unique hard-drive control.

**• High resolution printing**
8 dots/mm printing resolution.

### IEIMobile MODAT-100 utility

Print and test software included.



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# Advanced Data Acquisition Technology

The MODAT-100 built-in camera and 1D laser barcode offers the user multiple data collection methods.

### 3 Megapixels CMOS Camera

Capture images instantly and send data back to the office via HSDPA

### Features

- Superior low-light performance
- Ultra low-power, cost effective sensor
- Integrated real-time JPEG encoder
- Flexible support for external auto focus, optical zoom, and mechanical shutter
- Automatic image correction and enhancement

### High Power LED Flash Light

Image is enhanced even under weak light conditions. Great for night patrol and field survey applications.

### Features

- Input power: 3 W
- Emitted color: White
- Low power consumption

## Motorola 1D Laser or Intermec 2D image Barcode Scanner Pre-installed

### • Wide working range

- Meets the needs of a wide range of applications for increased productivity
- Easily optimized product designs

### • 100 scans per second

Optimized scanning speed delivers aggressive performance and accurate capture of all barcodes — even damaged and poor quality barcodes

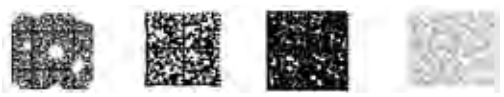
### • Low power consumption

Increasesd battery life in portable terminals

### • Bright scan line and aim mode

Intuitive and easy to use across the entire working range

### • Aggressive decoding algorithms




- Decoding is key to maximize productivity and reduce exception processes
- Extensive symbologies library including linear and 2D codes

### IEIMobile MODAT-100 Barcode Demo Software

- Press the hot key or […] key to scan the barcode. Test area displays the number.
- During testing, the barcode reader detects and displays the commands/responses on the message box.

# I/O Interface

- **microSD**
  You can install applications on your MODAT-100 by using:
  • Microsoft® ActiveSync. ActiveSync lets you transfer files, synchronize files, remotely debug, and perform other device management activities. ActiveSync is a free application available from the Microsoft® web site

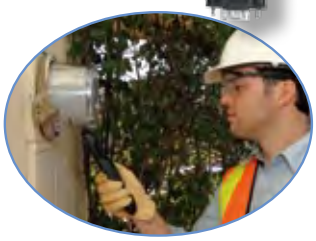
- **SIM Card**
  Insert SIM Card for 3.5G data transmssion

- **SAM Card**
  SAM (Security Authentication Module) card protects financial data transmission

- **16-pin Connector**
  16-pin connect cable

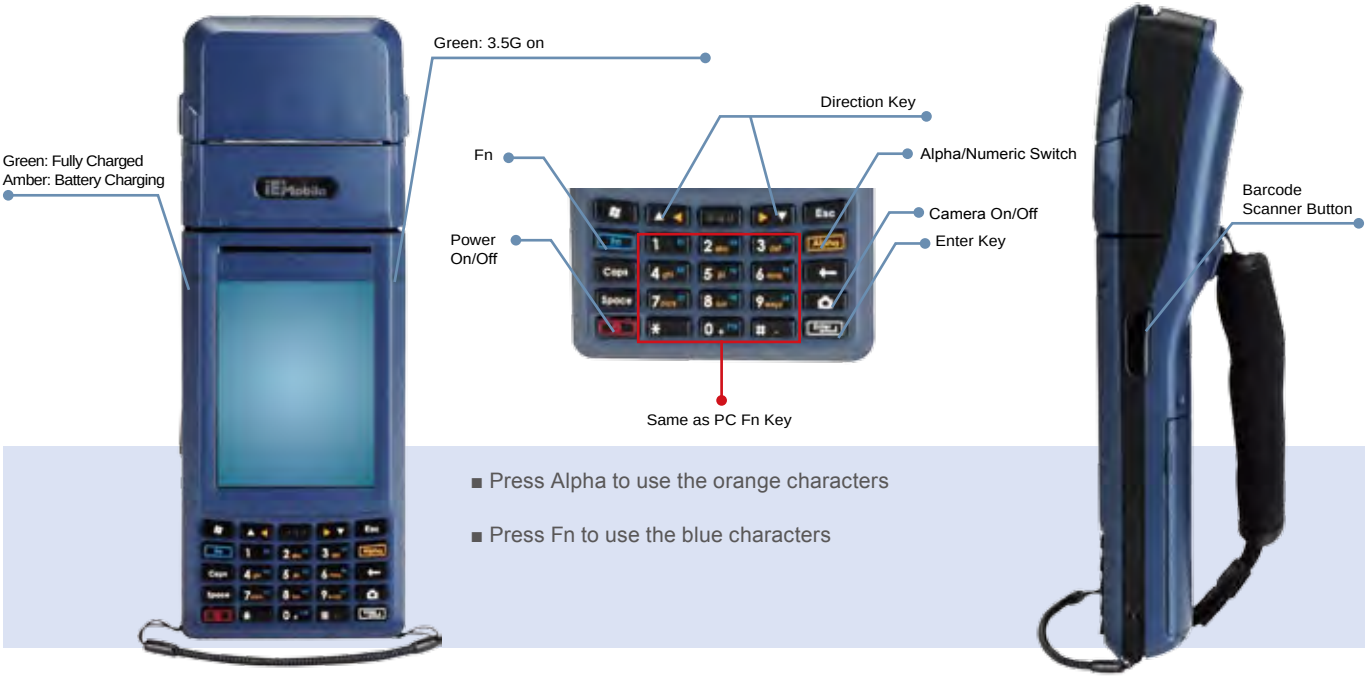
USB Host Application for intelligent electric testing
Connect the MODAT-100 to electric testing equipment and transmit the data via USB-Host.

USB Client Application
Connect to desk top and sync the MODAT-100 data.



RS-232 Application for mobile temperature test
Testing equipment connected via RS-232 allows field workers to test temperatures. The MODAT-100 detects errors and displays them on screen, allowing workers to address issues on-site.

# LED Indicators & HOT Keys




■ Press Alpha to use the orange characters

■ Press Fn to use the blue characters





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# MODAT-100-RFID-WB65-En

- **Target on out-field services. For example, public sector applications can utilize the HF RFID (13.56 MHz) to read tags and print out information with the thermal printer.**

## Specification

- Marvell® PXA 310 624 MHz CPU
- Windows® Embedded Handheld 6.5 pre-installed
- Built-in 32-channel GPS Receiver
- Built-in Smart Card Reader (SCR), 2'' thermal printer
- 1D laser barcode, **RFID supports ISO 14443 A/B & ISO 15693**
- Bluetooth, Wi-Fi and HSDPA

# Bundled IEIMobile MODAT-100 Software Support

- **Besides Windows® Embedded Handheld SDK, the MODAT-100 provides an SDK (Software Development Kit)**
  - SDK (for embedded Visual C++)

## Utility

- IEI Utility (Registry management, start up program and function test)
- Remote Management Tool
- Locate versions of Boot Loader and OS image on the "General" page
- When a new version of OS and/or Boot Loader is detected it can be updated by pressing the "Yes" button
- To open IEI Utility, click Start and select "Settings and System"
- To launch applications automatically, click the "Auto Execution" tab and add applications. Click the "Save to registry" button to save the settings

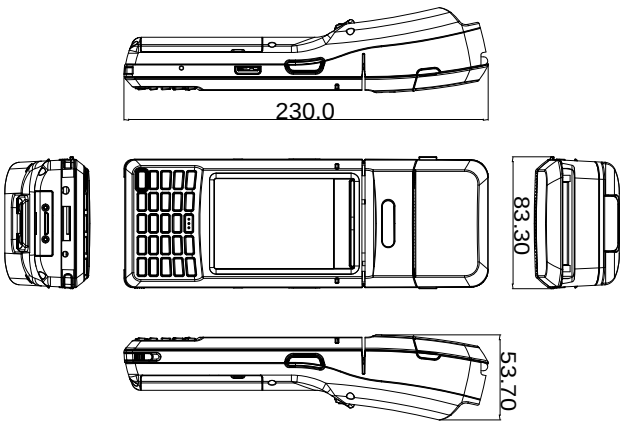
## Diagnostic and Demo AP

- **Internet Demo**
- **Barcode Demo**
- **MSR/SCR Demo**
- **HSDPA Demo/Utility**
- **Printer Demo**
- **Camera Demo**
- **GPS Demo**

## COM Port Debugging Tool

Diagnose the COM6 (RS-232 port) using the COM Port Debugging tool to receive/ send messages from the specified COM port.

*MODAT-100 Dimensions*
*(Unit: mm)*



# Specifications

| Model | | MODAT-100 |
|---|---|---|
| Display | LCD Size | 3.5" TFT LCD (Sunlight Readable) |
| | Brightness (cd/m²) | 190 cd/m² |
| | Max Resolution | 240 x 320 pixels QVGA |
| | Viewing Angle | 80/80/80/80 Deg. |
| | Touch Screen | 4-Wire Resistive Type Touch |
| System | CPU | Marvell® PXA 310 624 MHz |
| | Operation System | Windows® Embedded Handheld 6.5 |
| | Memory | 128 MB Flash + 256 MB SDRAM |
| | Storage | microSD Slot |
| Communication | Wireless LAN | Wi-Fi 802.11 b/g |
| | Bluetooth | Bluetooth 2.1 + EDR |
| | 3.5G | WCDMA/HSDPA |
| | GPS | GPS w/internal antenna |
| Data Collection | Barcode | Built-in 1D Laser Engine and optional 2D imager Engine |
| | Camera | 3 megapixels CMOS Camera with LED Flash Light |
| Indicators & Buttons | LED Indicators | Charging/Barcode status LED<br>HSDPA status LED |
| | Hot Keys | 2 x Barcode Trigger |
| I/O Interface | Audio | 1 x Headset and 1 x Speaker |
| | Expansion | 16-pin connector (RS-232 / battery charging/ OTG-Host/ OTG-Client) |
| | | 2" Thermal Printer |
| | | Smart Card Reader Support |
| | | Magnetic Stripe Reader Support |
| Power | Power Adapter | Input: VAC:90 V~264 V<br>Output: 12 V/3 A |
| | Battery | 7.4V 1880 mAh battery |
| Environment | Operating Temperature | 0ºC ~ 50ºC |
| | Storage Temperature | -20ºC ~ 70ºC |
| | Humidity | 5%~95% non-condensing |
| | Drop Survival | 1.2 M |
| | Environmental Protection | IP 54 (Front Panel only) |
| | Certification | CE, FCC |
| Physical Characteristics | Dimensions (LxWxH) (mm) | 230 x 84 x 54 |
| | Weight | 546 g |

# Optional Accessory List

| Item | Part No. | Description |
|---|---|---|
| Cradle | MODAT-100-CR01-R10 | Charging cradle integrated one charging bay along with USB Host, USB Client and RS-232 I/0 ports |
| 16Pin Cable | 32024-001500-100-RS | 16-pin cable Connect to USB Host, USB Client and RS232 |
| Battery Pack | 31603-000014-RS | 7.4V 1880 mAh Battery |
| Carrying Case | 7Z000-MODAT100POUCH-RS | Black, professional protector case with shutter strape for MODAT-100 |
| Car Holder | 19B00-000229-00-RS | MODAT-100 car holder with stand |
| Thermal Printer Paper | 5Z000-000165-RS | One thermal paper; 57MM*3.1CM*0.079TMM; |
| | 19N43-128001-00-00-RS | Five thermal paper per roll |
| microSD Card | 79D00-G001-006-RS | 1G microSD Card |
| | 79D00-G002-005-RS | 2G microSD Card |

# Support Function

| Part Number | Barcode | RFID | MSR | SCR |
|---|---|---|---|---|
| MODAT-100-RFID-WB65-En | 1DBarcode Scanner | 13.56MHz supports ISO 14443 A/B & ISO 15693 | N/A | Yes |
| MODAT-100-WB65-En5-En | 1D Barcode Scanner | N/A | Yes | Yes |
| MODAT-100-2D-WB65-En-En | 1D/2D Barcode Scanner | N/A | Yes | Yes |

# Packing List

| Item | Part No. | Q'ty | Description |
|---|---|---|---|
| Battery Pack | 31603-000014-RS | 1 | 7.4V 1880 mAh Battery |
| Carrying Case | 7Z000-MODAT100POUCH-RS | 1 | Black, professional protector case with shutter strap for MODAT-100 |
| Power Adapter | 63000-FSP036RAB613-RS | 1 | FSP036-RAB613; VAC:90V~264V; 12V/3A; 36W;PLUG Ψ1.35/Ψ3.5/ NONE LOCK/LENGTH:9.5MM; 1500MM; FSP |
| Stylus | 7Z000-MODAT100STYLUS-RS | 1 | |
| Headset | 30900-000001-RS | 1 | |

Battery Pack

Stylus

Power Adapter

Carrying Case

Cradle

Headset

16-pin Cable

Car Holder

Thermal Printer Paper

# Ordering Information

| Part No. | Description |
|---|---|
| MODAT-100-RFID-WB65-En | 3.5" TFT-LCD 190 cd/m² QVGA Enterprise PDA with Marvell® PXA 310 624MHz CPU, HSDPA, 802.11 b/g Wireless, Bluetooth,1D barcode scanner, RFID,Smart Card Reader,Windows® Embedded Handheld 6.5 OS, RoHS |
| MODAT-100-WB65-En | 3.5" TFT-LCD 190 cd/m² QVGA Enterprise PDA with Marvell® PXA 310 624MHz CPU, HSDPA, 802.11 b/g Wireless, Bluetooth, 1D barcode scanner, Smart Card Reader, Magnetic Stripe Card, Windows® Embedded Handheld 6.5 OS, RoHS |
| MODAT-100-2D-WB65-En | 3.5" TFT-LCD 190 cd/m² QVGA Enterprise PDA with Marvell® PXA 310 624MHz CPU, HSDPA, 802.11 b/g Wireless, Bluetooth, 1D/2D Imager barcode scanner, Smart Card Reader, Magnetic Stripe Card, Windows® Embedded Handheld 6.5 OS, RoHS |





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# MODAT-200

## Order Entry PDA

- 667 MHz ARM11 CPU
- Built-in Windows® Mobile 6.5 OS/ Windows® CE 6.0 Optional
- USB 1.1 Host/Client 2.0
- Built-in Wi-Fi and Bluetooth wireless communication
- 3.5” TFT resistive touch screen
- microSD slot

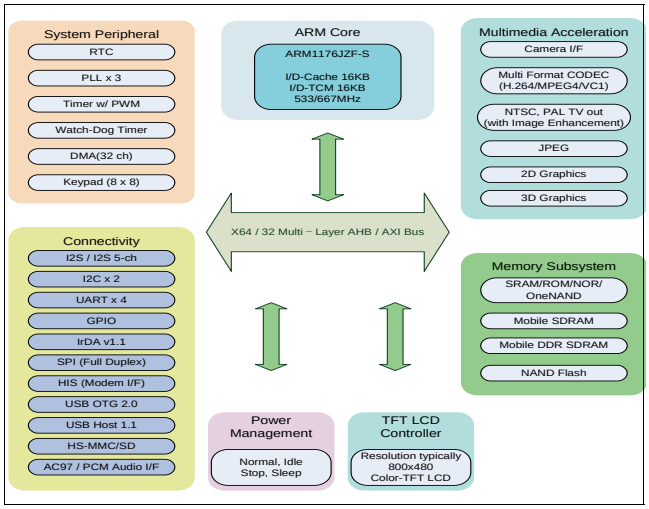
ARM SAMSUNG

Windows Mobile | Bluetooth | Wi-Fi | USB 2.0

## Application

- Quick Registration
- Inspection
- Table Service
- On-Line Sales

# High Performance, Low Power Consumption CPU




The S3C6410X is a 16/32-bit RISC microprocessor that delivers high performance with a cost-effective, energy-efficient design. Not only does it provide general application for mobile phones, its ARM1176JZF-S based CPU subsystem and Java acceleration engine make it a perfect match for handheld computers.

- Multiformat codec provides MPEG-4/H.263/H.264 encoding and decoding.
- 2D graphics and 3D graphics acceleration with Bit Blit and rotation.
- USB 2.0 OTG supports high-speed (480Mbps, on-chip transceiver).
- USB 1.1 Host suppors full-speed (12Mbps, on-chip transceiver).

# Built-in Windows Mobile 6.5 OS

- Windows® Mobile (WM) is a compact mobile operating system developed by Microsoft®, and designed for use in smart phones and mobile devices.
- The IEIMobile Enterprise PDA series runs on Windows® Embedded Handheld 6.5.

# Built-in Applications

- Internet Explorer Mobile
- Microsoft® Office Outlook Mobile
- Windows® Media Player Mobile
- Microsoft® Office for Mobile is programmable and compatible with desktop Windows® (optional)
- Microsoft® SQL Server Mobile edition for desktop PC or back-end ERP system (optional)

# Windows® Embedded Handheld Application Development

- **Windows® Embedded Handheld Device**
  - NET Compact framework
    - Visual basic .NET, Visual C# .NET
    - BCL (Base Class Libraries)
- **Native Code**
  - Machine code
  - C++ ; MFC / ATL / WTL / STL

Microsoft .net

Microsoft SQL Server

Microsoft Visual Studio

# Optional Windows CE 6.0 OS

- Run one of Microsoft's compact operating systems, either Windows CE or Windows® Embedded Handheld.
- Vertical market handhelds still run Windows CE & Windows® Embedded Handheld.

Microsoft Windows CE

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**MODAT-200**

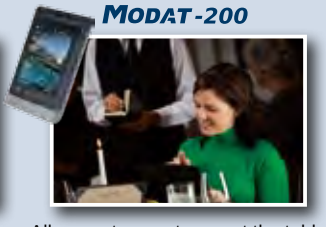
Take orders while customers are waiting in a busy shop or cafe

**MODAT-200**

Drive-through quick order services

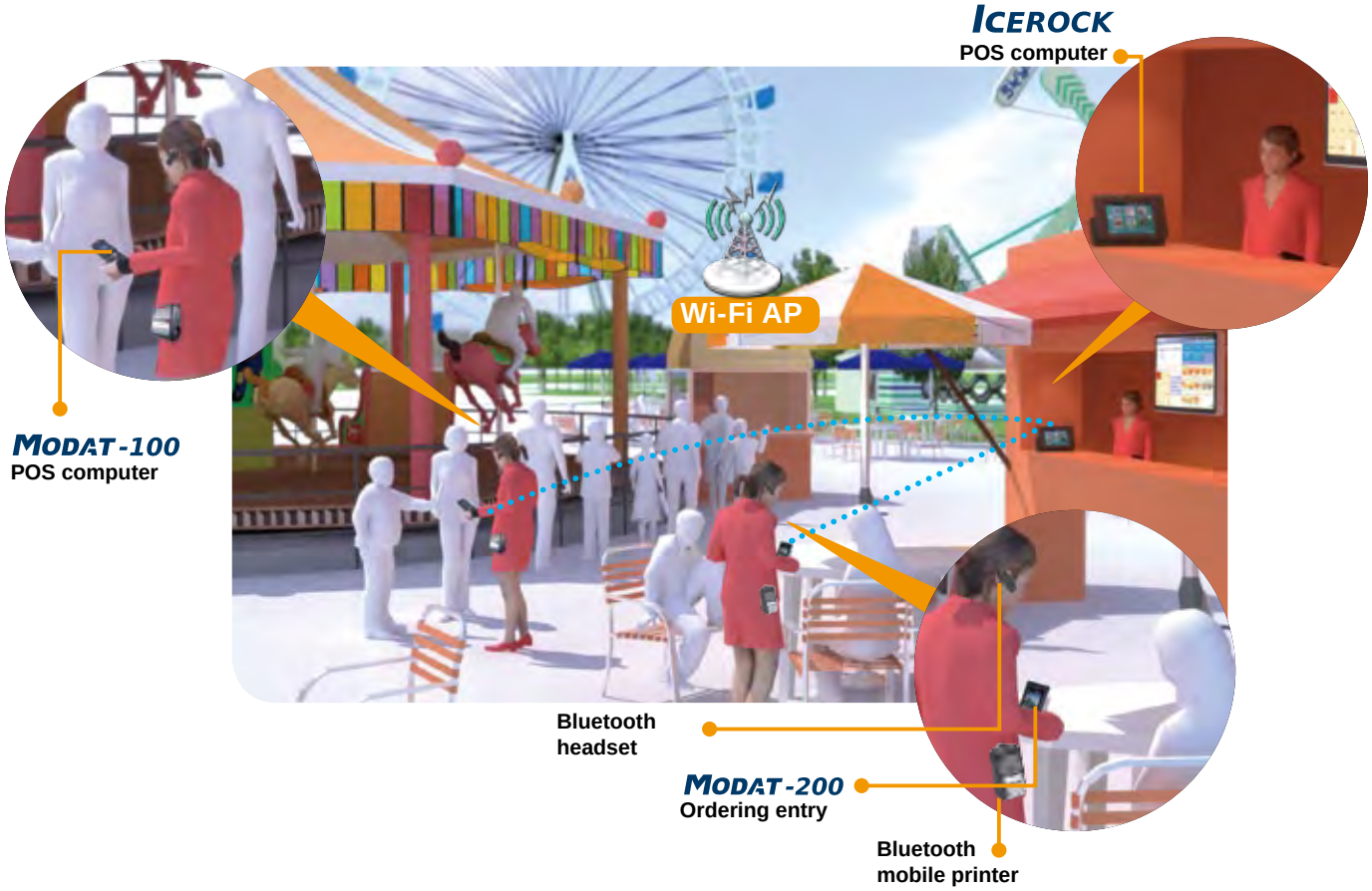
**MODAT-200**

Check reservations and table status at reception



**MODAT-200**

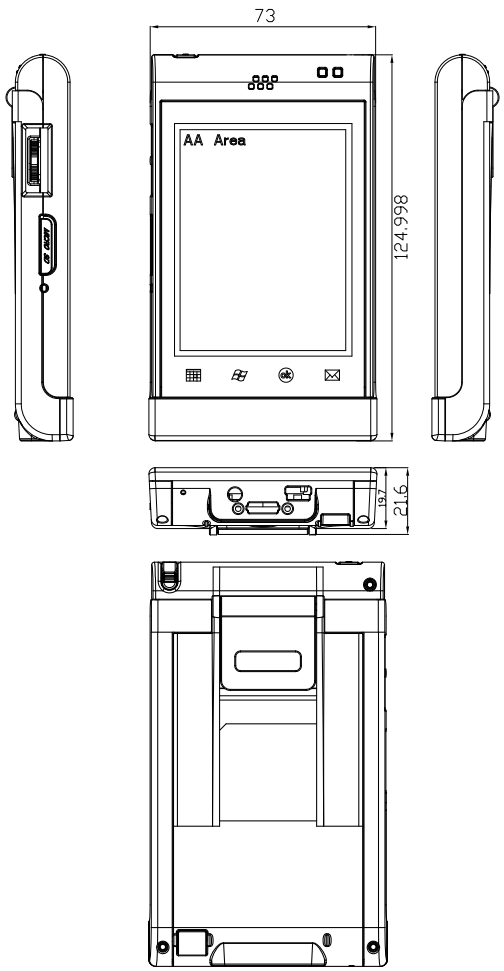
Allow customers to pay at the table, receive receipt and give feedback all at once



## Specifications

| Model | MODAT-200 | |
|---|---|---|
| Display | LCD Size | 3.5" TFT LCD |
| | Brightness (cd/m²) | 250 cd/m² |
| | Max. Resolution | 240 (H) x 320 (V) QVGA |
| | Viewing Angle | 80/80/80/80 Deg. |
| | Touch Screen | 4-Wire Resistive Type Touch |
| System | CPU | Samsung® 6410 ARM11 667MHz |
| | Operating System | Windows® Mobile 6.5 OS |
| | Memory | 128MB Flash + 128MB SDRAM |
| | Storage | microSD Slot |
| Communication | Wi-Fi | Wi-Fi 802.11b/g |
| | Bluetooth | Bluetooth 2.1 + EDR |
| Indicators & Buttons | LED Indicators | Message/battery/charging status LED<br>Wi-Fi / Bluetooth enable/disable LED |
| | Hot Keys | 1 x Rollng Key |
| I/O Interface | Audio | 1 x Headset and 1 x Speaker |
| | | Built-in Mic-in |
| | Expansion | 1 x Mini USB Host 1.1/Client 2.0 |
| Power | Power Adapter | Input: 100 V AC to 240 V AC ~ 50-60Hz 0.2A<br>Output: 5V/1A |
| | Battery | 3.7V 1800mAh battery<br>(built-in non-swappable) |
| Environment | Operating Temperature | -10˚C ~ 50˚C |
| | Storage Temperature | -20˚C ~ 70˚C |
| | Humidity | 5%~95% non-condensing |
| | Drop Survival | 1.5M |
| | Environmental Protection | IP 54 |
| | Certification | CE, FCC, BSMI |
| Physical Characteristics | Dimensions (LxWxH) (mm) | 125 x 74 x 18 |
| | Weight | 200 g |

## MODAT-200 Dimensions (Unit : mm)




## Ordering Information

| Part No. | Description |
|---|---|
| MODAT-200-CE60-En | 3.5" TFT-LCD 250 cd/m² QVGA Enterprise PDA with Samsung® 6410 ARM11 667MHz CPU,802.11 b/g Wireless, Bluetooth, Windows CE 6.0 OS, RoHS |
| MODAT-200-WB65-En | 3.5" TFT-LCD 250 cd/m² QVGA Enterprise PDA with Samsung® 6410 ARM11 667MHz CPU,802.11 b/g Wireless, Bluetooth, Windows Mobile 6.5 OS, RoHS |

## Packing List

| Item | Part No. | Q'ty |
|---|---|---|
| Cradle | MODAT-200-CR01-R10 | 1 |
| Leather Protective Case | 7Z000-MODAT200POUCH-RS | 1 |
| USB Cable | 32001-000301-100-RS | 1 |
| AC-DC Adapter | 63040-180005-000-RS | 1 |
| Headset | 30900-000001-RS | 1 |
| Stylus | 7Z000-MODAT200STYLUS-RS | 1 |
| Hand Strap | 7Z000-MODAT200STRAP-RS | 1 |
| User's Manual CD ROM | 7B000-000548-RS | 1 |

USB Cable

AC-DC Adapter

Headset

Hand Strap

Leather Protective Case

Stylus

Cradle

## Optional Accessory List

| Item | Part No. | Description |
|---|---|---|
| Leather Protective Case | 7Z000-MODAT200POUCH-RS | Black, professional leather protective case for MODAT-200 |
| AC-DC Adapter | 63040-180005-000-RS | Input: 100 V AC to 240 V AC ~ 50-60Hz0.2A<br>Output: 5 V DC, 1 A (Max) |
| Cradle | MODAT-200-CR01-R10 | One to one charging cradle with MODAT-200 |

# MODAT-328

## Stocktaking PDA

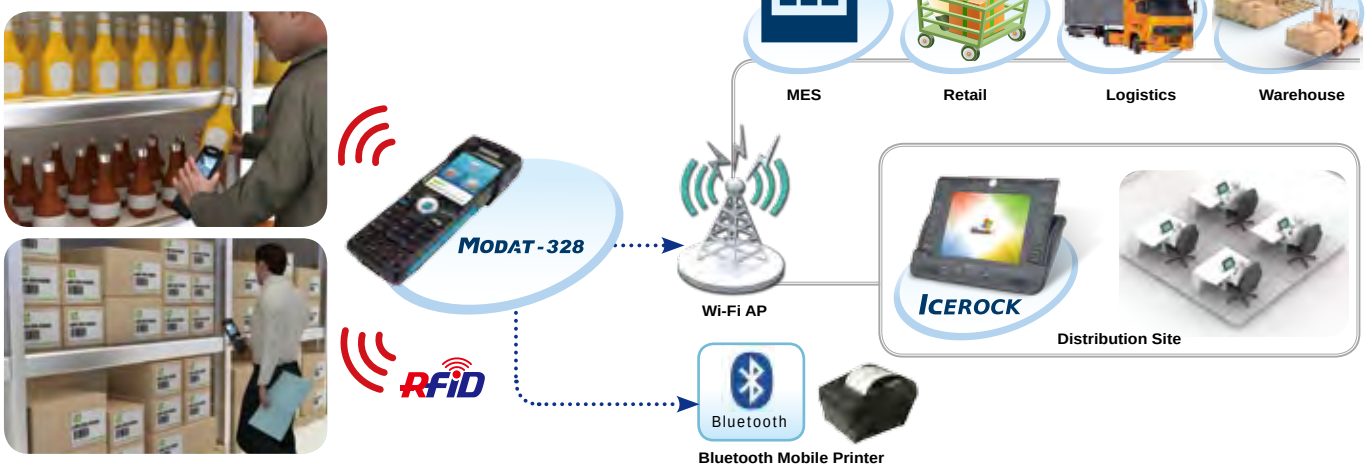
- 2.8” TFT LCD with resistive touch screen
- Marvell PXA 310 624 MHz CPU
- Built-in Windows® Embedded Handheld 6.5 OS
- Wi-Fi and Bluetooth wireless technology
- 3 Megapixels camera with LED flash
- Supports Mifare (ISO 14443A) Felica (ISO 14443B) and ISO 15693
- 1D/2D barcode reader
- Optional cradle with RS-232 and USB client port

Bluetooth | Wi-Fi | Camera | RFID | RS-232 | USB 2.0 | 1D Barcode Scanner | 2D Barcode Scanner | Windows Embedded

## Benefits

Designed to be an integral part of the warehousing management solution, the MODAT-328 is an all-functional stocktaking PDA with the Marvell PXA310 CPU and Windows® Embedded Handheld 6.5 operating system. It is a light-weight, ergonomic mobile terminal equipped with advanced data acquisition technologies: RFID, 1D/2D barcode reader, and 3 megapixels CMOS camera. Via built-in 802.11b/g Wi-Fi and Bluetooth wireless modules, the MODAT-328 allows quick and easy connection to other peripherals. Your mobile workforce is empowered with the ability to track and report real-time inventory levels and movements, reducing chances for delays, shortages and uncertainties. With the MODAT-328, it’s never been easier for businesses to remote-control warehouse and distribution center operations. On the manufacturing floor, up on the loading dock or out in the yard, the MODAT-328’s ultra-rigged design offers reliable performance under harsh environment.

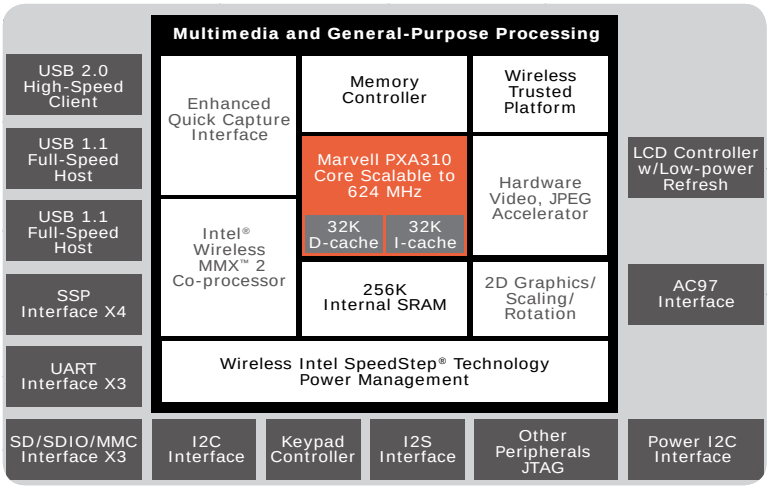
- Accurate and real-time inventory data
- Inventory visibility and better forecasting and accuracy enabling a reduction in safety stocking levels
- Reduction in misplaced goods and elimination of sales lost due to out of stocks
- Increase accuracy and reduced labor costs in receiving, put-away and shipping operations
- Reduce labor requirements for backroom functions such as physical inventory counting, receiving, and locating specific items
- Reduce losses and shrinkage of assets, also theft prevention
- Correct item name identification and reduce maintenance
- Increase distribution center efficiency and accuracy



# High Performance Low Power Consumption Platform

## Marvell® PXA 310

Built on a low-power 90nm process technology, the Marvell PXA 310 is a cost-effective, power-efficient solution with up to 624 MHz computing performance. In addition to hardware video acceleration, DRM security and video/ audio playback, it combines low-power modes with on-demand adjustment of voltage and frequency to support exceptional battery life in standby modes.




## Built-in Windows® Embedded Handheld 6.5

Windows® Embedded Handheld (WM) is a compact mobile operating system developed by Microsoft®, and designed for use in smart phones and mobile devices. IEIMobile Enterprise PDA series adopts Windows® Embedded Handheld 6.5 to meet the demands of your mobile workforce.

### Built-in Applications

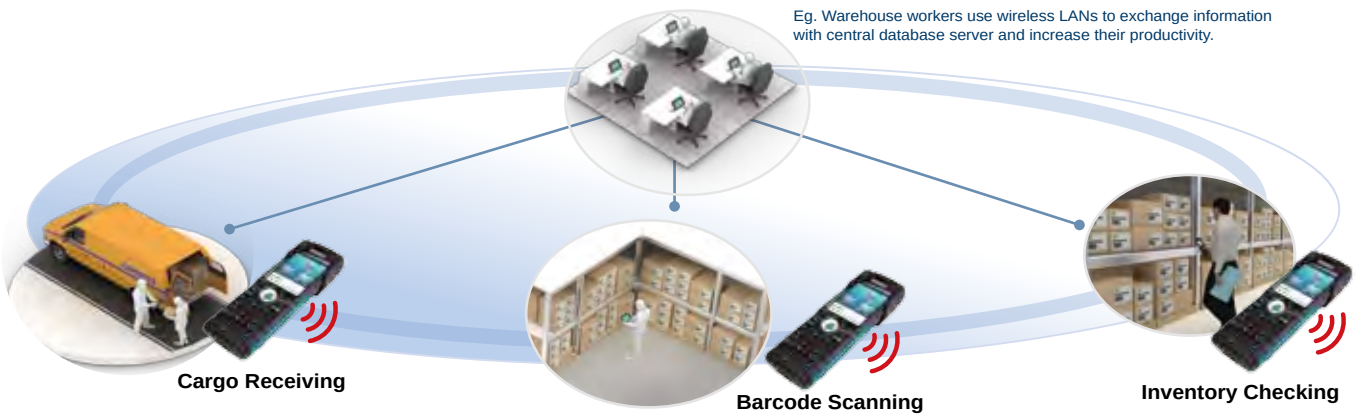
- Optional Windows® Embedded Handheld 6.5 Office
- Optional Microsoft® SQL Server Mobile Edition is compliant with the industrial leading standard DBMS and is compatible with desktop PC or back-end ERP system. It saves time and effort of building a new ERP system.

### Windows® Embedded Handheld Application Development

- Official IDE
- Managed Code
- Native Code

# Seamless Wireless Communication

Real-time data can be delivered and accessed using MODAT-328's built-in 802.11 b/g wireless LAN module to connect to wireless local area network (WLAN). Nowadays, efficient and streamlined work-flow is where most businesses look to reduce cost and improve competitiveness. With the seamless wireless connection, you can greatly enhance stock management system. The MODAT-328 also comes with Bluetooth 2.1 +EDR, offering a fast and easy way to connect and synchronize all the peripherals, such as printers and headsets.


Eg. Warehouse workers use wireless LANs to exchange information with central database server and increase their productivity.
Cargo Receiving
Barcode Scanning
Inventory Checking

Wi-Fi

**Local-Area Communication**

MODAT-328 gives you up to broadband-speed browsing and connectivity, compared to traditional wired LAN. It is best-suited for near field or ad-hoc data communications.

- Compliant with IEEE 802.11b/g
- Auto fallback optimal data rate
- Security : WPA/WPA2, 802.11i AES /CCMP, WEP with TKIP
- Hardware signaling BT/Wi-Fi co-existence supported

Bluetooth

**Peripheral Communication**

- Compliant with Bluetooth specification V1.2.
- Profile : SPP, HFP, HSP
- Up to 1Mbps data transfer rate and 10M distance

# Advanced Data Acquisition Technology

The MODAT-328 is a multi-modal device that supports 1D and 2D barcode scanning, RFID and imaging. RFID technology is capable of "simultaneous identification," capturing data from multiple tags within specific range all at the same time. In addition to RFID, the MODAT-328 has a built-in barcode scanning capability and a 3 megapixels camera with high power LED flashlight. The MODAT-328 is an ideal transaction-based stocktaking PDA.

## Built-in 13.56 MHz RFID Reader

### Supports Mifare(ISO 14443A) Felica(ISO 14443B) and ISO 15693

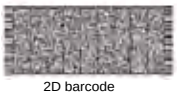
Combined with mobile computing and Web technology, RFID technology provides a way for organizations to identify and manage their assets in real-time.
The MODAT-328 integrated with RFID readers delivers a complete set of tools that eliminates paperwork, and gives proof of identification and attendance. Manual data entry becomes a thing of the past. Its RFID reader module supports standard ISO 14443A ISO 14443B and ISO 15693(smart label).

## 1D/2D Image Barcode Reader or 1D Laser Barcode Reader

MODAT-328's built-in barcode scanner can integrate with warehouse management software, providing rapid gains in storage efficiency. The MODAT-328 can quickly collect the data and build an inventory database. Through the warehouse management system, managers or administrators can calculate how much space is needed and where to put these items. Based on storage rules the customer needs and formulas designed to store inventory with maximum efficiency, the MODAT-328 can provide very detailed up-to-date information on key aspects of the business, enabling decisions to be made much more quickly and with more confidence. For example: fast-selling items can be identified quickly and automatically reordered to meet consumer demand, preventing a build-up of unwanted stock.

### 1D and 2D application

1D barcode is common in most household products and 2D barcode is common in industrial products where more information is needed to be stored in the label.



2D barcode

1D barcode

## 3 Megapixels CMOS Camera

### Features

The module features CMOS sensor and 2064V x 1552H resolution.

- Superior low-light performance, ultra low-power, low-cost sensor
- Integrated real-time JPEG encoder
- Flexible support for external auto focus, optical zoom, and mechanical shutter

# Stylish and Ergonomic Design

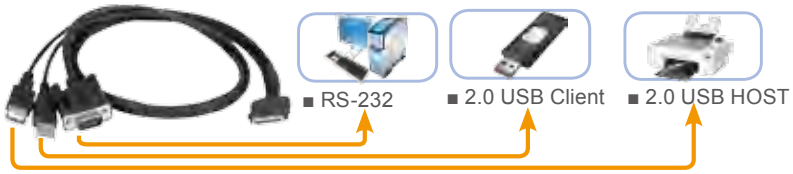
Brings a stylish and lightweight ergonomic look to the handheld mobile device, the MODAT-328 offers a comfortable grip and ultra portability with a petite size at 190 x 136 x 115mm while ensuring single-handed scanning service.

## LED Indicators & HOT Keys

- Provides 2.8" QVGA touch screen and simple user interface. It allows user to have easy access to all the relevant information and applications.
- Shockproof, dustproof, and waterproof in compliance with IP54.
- The ergonomic and professional keypad is made of wear-resistant PET+SUS and is easy to operate.

## I/O Interface

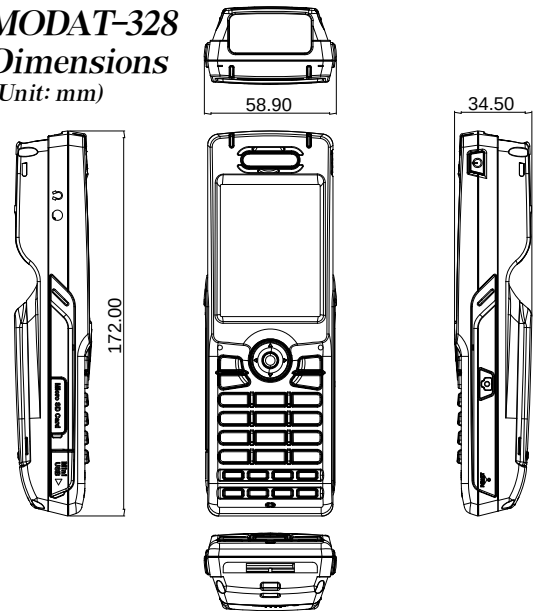
- **microSD:** Users can install applications in the MODAT-328 by using:
  - Microsoft® ActiveSync lets you transfer files, synchronize files, remotely debug, and perform other device management activities. ActiveSync is a free application available from the Microsoft® web site
  - microSD card
- **Mini USB (OTG) :** Expand the storage capacity and peripheral devices
- **16-pin Connector:** 16-pin connect cable



## Specifications

| Model | | MODAT-328 |
|---|---|---|
| Display | LCD Size | 2.8" TFT LCD |
| | Brightness (cd/m²) | 240 cd/m² |
| | Max Resolution | 240(H) x 320(V) QVGA |
| | Viewing Angle | 70/50/70/70 Deg. |
| | Touch Screen | 4-wire resistive type touch |
| System | CPU | Marvell® PXA 310 624MHz |
| | Operating System | Windows® Embedded Handheld 6.5 |
| | Memory | 256 MB Flash + 128 MB SDRAM |
| | Storage | microSD Slot |
| Communication | Wi-Fi | Wi-Fi 802.11 b/g |
| | Bluetooth | Bluetooth 2.1 + EDR |
| Data Collection | RFID | 13.56 MHz RFID reader support ISO15693 and 14443A/B compliant or ISO 14443A and Felica compliant |
| | Barcode | 1D/2D Imager Scan Engine |
| | Camera | 3 megapixels CMOS camera with LED flashlight |
| Indicators & Buttons | LED Indicators | Charging status LED<br>Wi-Fi / enable/disable LED |
| | Hot Keys | 3 x Barcode key<br>1 x Camera key |
| I/O Interface | Audio | 1 x Headset and 1 x Speaker |
| | | Built-in Mic-in |
| | Expansion | 1 x Mini USB Client 2.0 |
| Power | Power Adapter | Input: 100 V AC to 240 V AC ~ 50-60Hz 0.2A<br>Output: 5 V/2.1A |
| | Battery | 3.7V 1880 mAh battery |
| Environment | Operating Temperature | -10°C ~ 50°C |
| | Storage Temperature | -20°C ~ 60°C |
| | Humidity | 5%~95% non-condensing |
| | Drop Survival | 1.5M |
| | Environmental Protection | IP 54 (Front panel) |
| | Certification | CE, FCC |
| Physical Characteristics | Dimensions (LxWxH) (mm) | 172 x 55 x 31 |
| | Weight | 245 g |

## MODAT-328 Dimensions (Unit: mm)




## Support Function

| Part Number | Wireless | Barcode | RFID |
|---|---|---|---|
| MODAT-328-WB65-En-R11 | 802.11 b/g | 1D/2D Barcode Scanner | Mifare (ISO 14443A) Felica (ISO 14443B) and ISO 15693 |
| MODAT-328-1D-WB65-En | 802.11 b/g | 1D Barcode Scanner | N/A |

## Ordering Information

| Part No. | Describtion |
|---|---|
| MODAT-328-WB65-En-R11 | 2.8" TFT-LCD 240 cd/m² QVGA Enterprise PDA with Marvell® PXA 310 624MHz CPU, 802.11 b/g Wireless, Bluetooth, 1D/2D Barcode Scanner, RFID, 3M Pixels Camera, Windows® Embedded Handheld 6.5 OS, RoHS |
| MODAT-328-1D-WB65-En | 2.8" TFT-LCD 240 cd/m² QVGA Enterprise PDA with Marvell® PXA 310 624MHz CPU, 802.11 b/g Wireless, Bluetooth, 1D Barcode Scanner,Windows® Embedded Handheld 6.5 OS, RoHS |

## Packing List

| Item | Part No. | Q'ty | Description |
|---|---|---|---|
| Battery Pack | 31603-000015-RS | 1 | 3.7V 1880 mAh Battery |
| Belt Clip Case | 7Z000-MODAT-328POUCH-RS | 1 | Black, MODAT-328 Professional Belt Clip Case |
| USB Cable | 32001-000301-100-RS | 1 | |
| AC-DC Adapter | 63040-330010-000-RS | 1 | Vin:90~264VAC;10.5W, (NO LOAD 0.1W) Vout:5VDC;USB;CCL;RoHS |
| Headset | 30900-000001-RS | 1 | |
| Stylus | 7Z000-431250003C000RS-RS | 1 | |
| Hand Strap | 7Z000-MODAT300STRAP-RS | 1 | |
| User's Manual CD ROM | 7B000-000550-RS | 1 | |

## Optional Accessory List

| Item | Part No. | Description |
|---|---|---|
| Cradle | MODAT-300-CR01-R10 | Charging cradle with USB Client |
| Battery Pack | 31603-000015-RS | 3.7V 1880 mAh Battery |
| Battery Pack - L | 31603-000017-RS | 3.7V 3000 mAh Battery (Note: Please confirm that need to purchase the Batter Pack Cover-L or not) |
| Belt Clip Case | 7Z000-MODAT-328POUCH-RS | Black, MODAT-328 Professional Belt Clip Case |
| 16-pin Cable | 32024-001500-100-RS | Connect to USB Host, USB Client and RS-232 |
| Battery Pack - L Cover | 9N41-209001-00-00-A-RS | The Cover of Battery Pack - L ( Note : Please select this cover when the first time purchase the Battery Pack - L) |

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# MODAT-335

## Field Service Terminal

- 3.5” TFT sunlight readable LCD touch screen
- Marvell® PXA 310 624MHz CPU
- Built-in Windows® Embedded Handheld 6.5 OS
- Wi-Fi, Bluetooth and WCDMA/HSDPA or GPRS wireless technology
- Built-in GPS
- 1D Laser/2D Imager Scan Engine and Supports Mifare (ISO 14443A) Felica (ISO 14443B) and ISO 15693 RFID reader 3 Megapixels Camera
- Optional Handle Grip
- Optional UHF read Multi Tags and support 3 meter reading distance

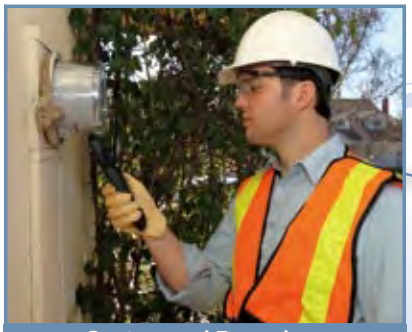
3.5G/ HSDPA | Barcode Scanner | 2D Barcode Scanner | RFID | Wi-Fi | Bluetooth | GPS | Windows Embedded Handheld

## Field Service Application

The MODAT-335 is a highly integrated terminal designed for the mobile field service workforce. Benefits include:

- Fleet and inventory tracking
- Access to detailed customer and asset records
- Automated service order dispatch
- Remote update of work status
- Capture customer and asset data easily
- Create notifications and service orders on the spot

Track and Locate


Capture and Record

Access and Update

Out-field
WWAN
(GPRS/3G/ HSDPA/WiMAX)

# Advanced Data Acquisition Technology

## 1D/2D Image Barcode Scan Engine

2D Barcode Scanner

The built-in 1D/2D barcode scanner features a high quality reading function and advanced image capture capabilities suitable for technicians to identify and record information in the field.

## Built-in 13.56 MHz RFID Reader

RFID

Compliant with ISO15693 and 14443A, the built-in RFID reader automates data capture. The RFID field service application reduces the number of parts required on a service vehicle, eliminate manual data entry, and improve productivity and customer service.

## 3 Megapixels CMOS Camera

Camera

The 3 megapixels camera features a CMOS sensor and a 2064V x 1552H resolution. The camera is perfect for technicians to capture images while working in the field.

# Seamless / Wireless Communication

The MODAT-335 keeps field workers connected through a built-in 3.5G modem and a 802.11 b/g wireless LAN module and Bluetooth. With these technologies, the mobile workforce stays connected to back-offices in order to verify and obtain information, update work status and dispatch jobs in real-time.

## Local-Area Communication

Wi-Fi

It gives you up to broadband-speed browsing and connectivity, compared to traditional wired LAN.insert a space Best for near field or ad-hoc data communications.

- Compliant with IEEE 802.11b/g
- Auto fallback optimal data rate
- Security: WPA/WPA2, 802.11i AES /CCMP, WEP with TKIP
- Hardware signaling BT/Wi-Fi co-existence supported

## Peripheral Communication

Bluetooth

- Compliant with Bluetooth specification V1.2.
- Profile: SPP, HFP, HSP
- Up to 1 Mbps data transfer rate and 10 M distance

## Wide-Area Mobile Communication

3.5G/ HSUPA

- UMTS/HSDPA: Triple band, 850//1900/2100 MHz
- GSM/GPRS/EDGE: Quad band, 850/900/1800/1900 MHz





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Spectra (Schweiz) AG
www.spectra.ch info@spectra.ch

# Built-in GPS

Together with wireless technologies such as 3G, the built-in GPS allows for accurate location and tracking of users. This feature has two important implications:

- Users can be located on a map to reference his/her own location in relation to other landmarks. With location-based and map services, mobile workers can locate important destinations such as gas stations and customers in an unknown territory.

- Location information obtained from the GPS can be transmitted to the backend office through wireless broadband connectivity, allowing employees to be tracked while they are on the move. This makes dispatch work more efficient as mobile workers can be assigned jobs according to their proximity to customers.

# Semi-Rugged Design

The MODAT-335 is a mobile field service terminal specifically designed to meet out-field conditions, with the following taken intoconsideration:

- The ability to withstand tough outdoor conditions such as high and low operating and storage temperatures.
- The ability to endure rough handling such as accidental drops and bumps.
- The ability to function under almost any circumstances such as moist conditions.

## IP 54 Rating

- Protected against dust that would interfere with normal operation
- Protected against water splashed against the device from any direction

## Sunlight Readable - 3.5" TFT LCD

Display can be read in bright sunlight

## 1.5 M Drop Test

Passed 1.5M drop test 26 times

## Operating Temperature -10°C ~ 50°C

Can operate in a wide range of temperatures

## Storage Temperature -20°C ~ 60°C

Can be stored under extreme temperatures

# Advanced Optional Accessories

## UHF RFID Reader

The communication frequencies used in radio frequency identification (RFID) technology range from 125KHz to 2.45GHz. The MODAT-335 features an optional ultra high frequency (UHF) reader. The MODAT-335:

- Detects a frequency range from 840MHz to 960MHz
- Allows a long reading range
- Is excellent for reading multiple tags
- Carry one 3000 mAh Battery inside
- Design 4 screws which can fix the UHF on the device

3000 mAh battery can support UHF power consumption, provide longer working hours!

**Vehicle Identification**
Verify and identify vehicle transponders.

**Object or Personnel Tracking**
Verify job or order delivery assignment.

**Multiple Item Identification**
Read multiple items at once, saving time and effort.

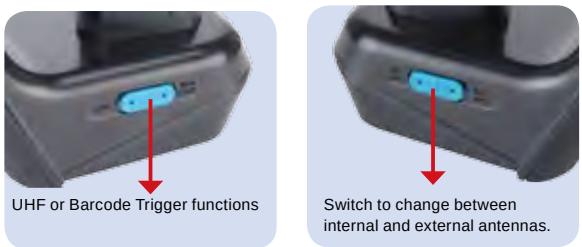
**Long Range Reading**
Read tags from a long distance.

## User friendly design

### Easy to Install and Clip

Clip design makes it easy to fix the UHF pistol on MODAT-335

### Easy to switch and convenient to use



## Handle Grip

The MODAT-335 features a removable handle grip which can be secured to the device whenever the user needs it. Its advantages include:

- Easy to hold and carry while reading tags
- Increased reading angles

### Handle Grip Installation

Spectra GmbH & Co. KG
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Spectra (Schweiz) AG
www.spectra.ch info@spectra.ch

# MODAT-335A New

## Field Service Terminal

- 3.5” TFT sunlight readable LCD touch screen
- Texas Instruments Sitara ARM Cortex A8 CPU
- Built-in Android 2.3.4 OS
- Wi-Fi, Bluetooth and WCDMA/HSDPA or GPRS wireless technology
- Built-in GPS
- 1D Laser/2D Imager Scan Engine and Supports Mifare (ISO 14443A) Felica (ISO 14443B) and ISO 15693 RFID reader 3 Megapixels Camera
- Optional Handle Grip
- Optional UHF read Multi Tags and support 3 meter reading distance

Cortex Intelligent Processors by ARM

Texas Instruments

3.5G/ HSDPA | Barcode Scanner | 2D Barcode Scanner | RFID | Wi-Fi | Bluetooth | GPS | Android

# Power Saving and Trendy Platform

## TI Cortex A8 CPU

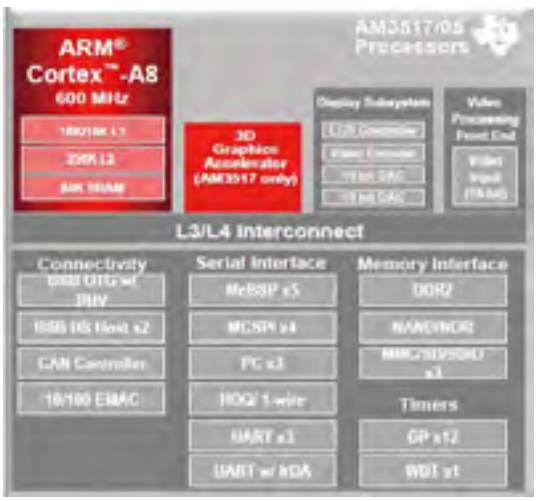
TI’s Sitara™ family of highly-integrated ARM9™ and ARM Cortex™-A8 microprocessor portfolio offers various combinations of high-performance and low power levels, providing the ability to create an array of products using a common hardware and software platform.

**Benefit**
- Support OS such as Linux, Win CE, RTOS
- 10M polygons/second for robust GUIs
- Multi windows overlay for hardware accelerated user

**Suggested Application**
- Industrial/Home automation
- Point of service

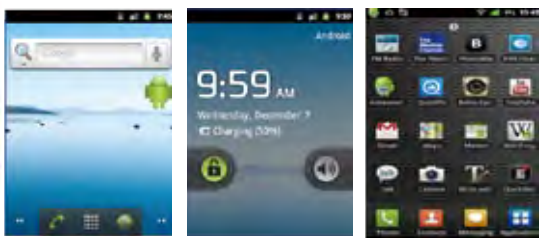
**Power**
- Total Power: L700mW
- Standby Power: 12mW

Texas Instruments




## Android 2.3.4 Operating System

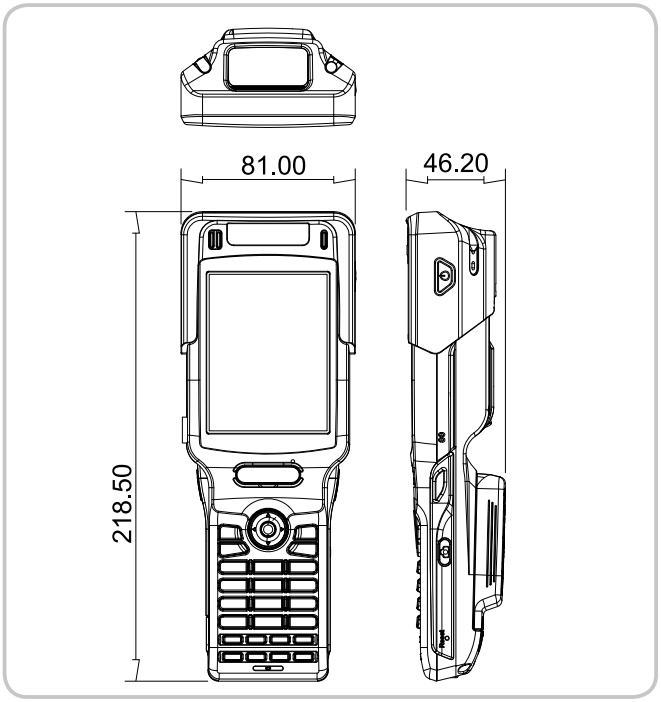
- Android is an operating system for mobile devices such as smartphones and tablet computers. It is developed by the Open Handset Alliance led by Google.
- Android was listed as the best-selling smartphone platform worldwide in Q4 2010 by Canalys with over 200 million Android devices in use by November 2011.
- 2.3 Gingerbread refined the user interface, improved the soft keyboard and copy/paste features, improved gaming performance, added SIP support (VoIP calls), and added support for Near Field Communication.




Android Security Issue:
Android applications run in a sandbox, an isolated area of the operating system that does not have access to the rest of the system’s resources, unless access permissions are granted by the user when the application is installed. Before installing an application, Android Market displays all required permissions.

# Specifications

| Model | MODAT-335 | |
|---|---|---|
| Display | LCD Size | 3.5" TFT LCD (Sunlight Readable) |
| | Brightness (cd/m² ) | 190 cd/m² |
| | Max Resolution | 240(H) x 320(V) QVGA |
| | Viewing Angle | 80/80/80/80 Deg. |
| | Touch Screen | 4-wire resistive type touch |
| System | CPU | Marvell® PXA 310 624MHz (Windows Embedded Handheld 6.5) or TI Sitara AM3715 (Android 2.3.4) |
| | Operating System | Windows® Embedded Handheld 6.5 or Android 2.3.4 |
| | Memory | 256MB Flash + 256MB SDRAM |
| | Storage | microSD Slot |
| Communication | Wireless LAN | Wi-Fi 802.11 b/g/n |
| | Bluetooth | Bluetooth 2.1+EDR |
| | Modem | WCDMA/HSDPA or GPRS |
| | GPS | GPS w/internal antenna |
| Data Collection | RFID | 13.56 MHz RFID Supports Mifare (ISO 14443A) Felica (ISO 14443B) and ISO 15693 |
| | UHF (optional) | EPC Global Class1 Gen2 support ISO/IEC 18000-6 Type C and at least 3m reading distance |
| | Barcode | 1D/2D Image Scan Engine |
| | Camera | 3 megapixels CMOS Camera with LED Flash Light |
| Indicators & Buttons | LED Indicators | Wi-Fi enable / disable LED (Green) 3.5G or 2.5G enable / disable LED (Green) Charging Status / Full LED (Orange / Green) |
| | Hot Keys | 2 x Barcode Key/ 1 x Camera Key |
| I/O Interface | Audio | 1 x Headset and 1 x Speaker |
| | Expansion | 1 x Mini USB Client 2.0 |
| | | 16-Pin connector (RS-232/ Battery Charging/ USB Host / USB Client) |
| Power | Power input | Input: 100V AC to 240V AC ~ 50-60Hz 0.2A<br>Output: 5V / 2.1A |
| | Battery | 3.7V 3000 mAh battery |
| Enviroment | Operating Temperature | -10°C~50°C |
| | Storage Temperature | -20°C~60°C |
| | Humidity | 5%~90% non-condensing |
| | Drop Survival | 1.5M |
| | Environmental Protection | IP 54 |
| | Certification | CE / FCC |
| Physical Characteristics | Dimensions (LxWxH) (mm) | 218.5 x 81 x 46.2 |
| | Weight | 405g |




# Optional Accessory List

| Item | Part No. | Description |
|---|---|---|
| Cradle | MODAT-300-CR01-R10 | Charging cradle with USB Client |
| Battery Pack | 31603-000017-RS | 3.7V 3000 mAh Battery |
| 16-pin Cable | 32024-001500-100-RS | Connect to USB Host, USB Client and RS-232 |
| Handle Grip | MODAT-335-GRIP-R10 | Removable handle grip can trigger 1D/2D barcode |
| UHF Reader | MODAT-335-UHF-R10 | Ultra high frequency (UHF) reader whith 3000 mAh battery. |

# Ordering Information

| Part No. | | Description |
|---|---|---|
| Windows® Embedded Handheld 6.5 Operating System | MODAT-335-WB65-En | 3.5" TFT-LCD, Enterprise PDA with Marvell® PXA 310 624MHz CPU, 802.11 b/g Wireless, Bluetooth, HSDPA,GPS, 1D/2D Barcode Scanner, RFID, 3M Pixels Camera, Windows® Embedded Handheld 6.5 OS, RoHS |
| | MODAT-335-GPRS-WB65-En | 3.5" TFT-LCD, Enterprise PDA with Marvell® PXA 310 624MHz CPU, 802.11 b/g Wireless, Bluetooth, GPRS/GSM, GPS, 1D Barcode Scanner, RFID, 3M Pixels Camera, Windows® Embedded Handheld 6.5 OS, RoHS |
| | MODAT-335-1D-WB65-En | 3.5" TFT-LCD, Enterprise PDA with Marvell® PXA 310 624MHz CPU, 802.11 b/g Wireless, Bluetooth, 1D Barcode Scanner, 3M Pixels Camera, Windows® Embedded Handheld 6.5 OS, RoHS |
| Android 2.3.4 Operating System | MODAT-335-AD23-En | 3.5" TFT-LCD, Enterprise PDA with TI Sitara AM3715 CPU, 802.11 b/g Wireless, Bluetooth, HSDPA,GPS, 1D/2D Barcode Scanner, RFID, 3M Pixels Camera, Android 2.3.4 OS, RoHS |
| | MODAT-335-1D-AD23-En | 3.5" TFT-LCD, Enterprise PDA with TI Sitara AM3715 CPU, 802.11 b/g Wireless, Bluetooth, 1D Barcode Scanner, 3M Pixels Camera, Android 2.3.4 OS, RoHS |

# Packing List

| Item | Part No. | Q'ty |
|---|---|---|
| Battery Pack | 31603-000017-RS | 1 |
| USB Cable | 32001-000301-100-RS | 1 |
| AC-DC Adapter | 63040-330010-000-RS | 1 |
| Headset | 30900-000001-RS | 1 |
| Stylus | 7Z000-43150003C000RS-RS | 1 |
| Belt Clip Case | 7Z000-MODAT-335POUCH-RS | 1 |

Cradle

USB Cable

Headset

Battery Pack

Stylus

16-pin Cable

# Support Function

| Part No. | OS | Wi-Fi | Blutooth | Modem | GPS | Barcode | RFID | Camera |
|---|---|---|---|---|---|---|---|---|
| MODAT-335-WB65-En | Windows Embedded Handheld 6.5 | 802.11 b/g/n | Bluetooth 2.1+EDR | WCDMA/ HSDPA | GPS w/internal antenna | 1D/2D Image Scan Engine | Supports Mifare (ISO 14443A) Felica (ISO 14443B) and ISO 15693 and 14443A/B compliant | 3M Pixels |
| MODAT-335-GPRS-WB65-En | | 802.11 b/g/n | Bluetooth 2.1+EDR | GPRS/GSM | GPS w/internal antenna | 1D Laser Scan Engine | 13.56 MHz RFID support ISO 15693 and 14443A/B compliant | 3M Pixels |
| MODAT-335-1D-WB65-En | | 802.11 b/g/n | Bluetooth 2.1+EDR | N/A | N/A | 1D Laser Scan Engine | N/A | 3M Pixels |
| MODAT-335-AD23-En | Android 2.3.4 | 802.11 b/g/n | Bluetooth 2.1+EDR | WCDMA/ HSDPA | GPS w/internal antenna | 1D/2D Image Scan Engine | Supports Mifare (ISO 14443A) Felica (ISO 14443B) and ISO 15693 and 14443A/B compliant | 3M Pixels |
| MODAT-335-1D-AD23-En | | 802.11 b/g/n | Bluetooth 2.1+EDR | N/A | N/A | 1D Laser Scan Engine | N/A | 3M Pixels |

spectra

# Automotive PC

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# Automotive PC

## Carputer

Combining with more than one decade of in-vehicle computing device ODM experiences and innovative design concepts, IEIMobile provides applicable in-vehicle computing solutions in all aspects.

Carputer is the predominant term used to describe a category of mobile computer designed or modified to specifically be installed and run in automobiles. Originally many do-it-your-selfers have built carputers from laptops and small form factor computers based on industrial personal computer technology and connected with several external peripherals such as GPS receiver, GPRS modem, vehicle power supply, and On-Board Diagnostics (OBD-II) converter.

Now mobile technology and new IT solution causes the creation of more advanced carputers that integrate all these peripherals in one single device to become more compact, rugged, applicable, and survivable in vehicle environment. The popularity of carputer also brings the booming of carputer providers to come out with different product alias like Car-PC, vehicle PC, vehicle computer, in-vehicle computer, auto PC, car computer, or vehicle-mounted computer.

## In-Vehicle Infotainment (IVI)

The growing needs to access information in remote, mobile environments have sparked interests in so-called In-Vehicle Telematics Systems (IVTS). These relatively new systems have the potential to deliver computing facilitates to road vehicles, which may include in-vehicle infotainment, route-guidance and navigation and the provision of vital information resources used by fleet haulage companies and emergency services (police, fire and ambulance).

In-Vehicle Infotainment (IVI) systems are devices that deliver navigation, entertainment, and networked computing services in vehicles, such as cars, trucks, planes, and buses. Automotive manufacturers in particular are increasingly viewing IVI systems as a key differentiator in their products. Drivers and passengers are coming to expect the same type of innovations they see in other devices, such as mobile computers and handsets, in their vehicles. As vehicles become connected to the internet, the demand for internet-based entertainment applications and services increases and IEIMobile strives to accelerate the pace of innovation in IVI.

## Location-Based Service (LBS)

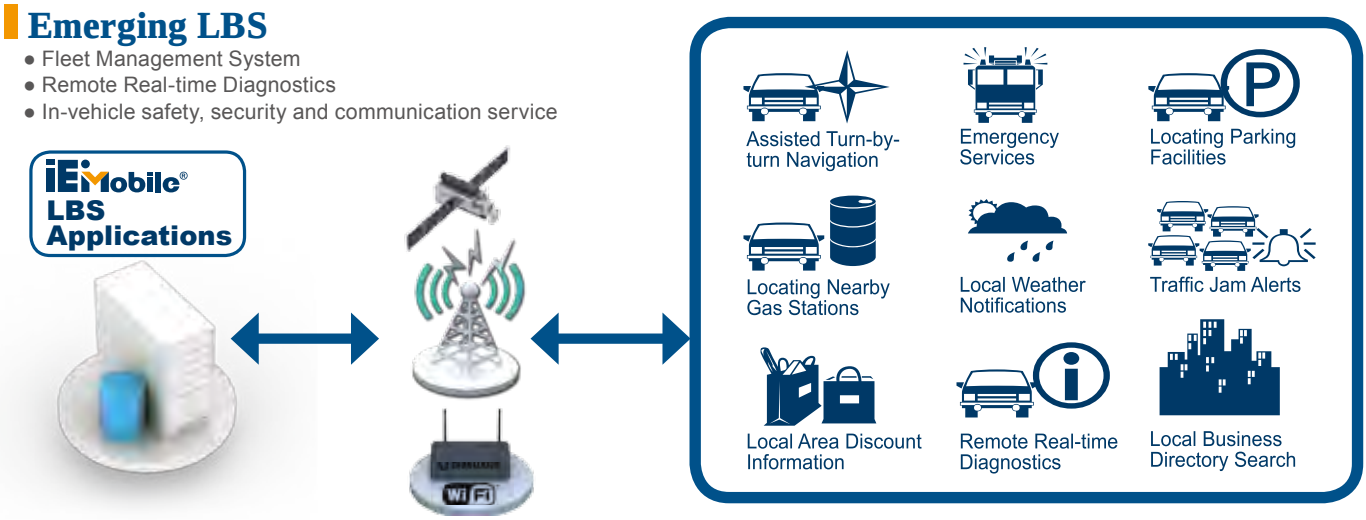
A location-based service (LBS) is an information and entertainment service, accessible with mobile devices through the mobile network and utilizing the ability to make use of the geographical position of the mobile device. These emerging growing markets of LBS require mobile devices, wireless service and GPS satellite signals to be available and operating for features to function properly.

Mobile messaging plays an essential role in LBS. Messaging, especially SMS, has been used in combination with various LBS applications, such as location-based mobile advertising. SMS is still the main technology carrying mobile advertising / marketing campaigns to mobile devices. A classic example of LBS applications using SMS is the delivery of mobile coupons or discounts to mobile subscribers who are near the advertising restaurants, cafes, movie theatres.

IEIMobile is dedicated to provide industrial mobile electronics devices along with turnkey software solutions to leverage LBS providers and operators to focus on their application and business developments.

### Emerging LBS

- Fleet Management System
- Remote Real-time Diagnostics
- In-vehicle safety, security and communication service





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## More LBS Examples

- Locating people and vehicle on a map displayed on the mobile device
- Finding someone or something. Person by skill (doctor), business directory, navigation, weather, traffic, room schedules, stolen phone, emergency calls
- Location-based mobile advertising
- Proximity-based notification (push or pull). Targeted advertising, buddy list, common profile matching (dating), automatic airport check-in, and payment based upon proximity (EZ pass, toll watch)
- Turn by turn navigation to any address
- Receiving alerts, such as on sale notification or traffic jam alert
- Requesting the nearest business or service, such as an ATM or a restaurant
- Asset recovery combined with active RF to find, for example, stolen vehicles or assets in containers
- GPS data for operators to dispatch emergency personnel to the correct location
- Resource tracking with dynamic distribution. Taxis, service people, rental equipment, doctors, fleet scheduling

# On-Board Diagnostics (OBD-II)

- On-Board Diagnostics, or OBD, in an automotive context, is a generic term referring to a vehicle's self-diagnostic and reporting capability. OBD systems give the vehicle owner or a repair technician access to state-of-health information for various vehicle sub-systems.
- OBD-II is a standard that specifies the type of diagnostic connector and its pin-out, the electrical signaling protocols available, and the messaging format.
- Almost all of the automobiles produced today are required, by law, to provide an interface for connecting a diagnostic test equipment.

OBD-II Cable

| Pin | Description |
|---|---|
| 1 | Manufacturer discretion. GM: J2411 GMLAN/SWC/Single-Wire CAN. |
| 2 | Bus positive Line of SAE-J1850 PWM and SAE-1850 VPW |
| 3 | Ford DCL(+) Argentina, Brazil (pre OBD-II) 1997-2000, Usa, Europe, etc. Chrysler CCD Bus(+) |
| 4 | Chassis ground |
| 5 | Signal ground |
| 6 | CAN high (ISO 15765-4 and SAE-J2284) |
| 7 | K line of ISO 9141-2 and ISO 14230-4 |
| 8 | - |
| 9 | - |
| 10 | Bus negative Line of SAE-J1850 PWM only (not SAE-1850 VPW) |
| 11 | Ford DCL(-) Argentina, Brazil (pre OBD-II) 1997-2000, Usa, Europe, etc. Chrysler CCD Bus(-) |
| 12 | - |
| 13 | - |
| 14 | CAN low (ISO 15765-4 and SAE-J2284) |
| 15 | L line of ISO 9141-2 and ISO 14230-4 |
| 16 | Battery voltage |

**There are five signalling protocols currently in use with the OBD-II interface. Any given vehicle will likely only implement one of the protocols.**

- SAE J1850 PWM (pulse-width modulation - 41.6 kB/sec, standard of the Ford Motor Company)
- SAE J1850 VPW (variable pulse width - 10.4/41.6 kB/sec, standard of General Motors)
- ISO 9141-2. K-line and L-line. This protocol has an asynchronous serial data rate of 10.4 kBaud. It is primarily used in Chrysler, European, and Asian vehicles.
- ISO 14230 KWP2000 (Keyword Protocol 2000)
- ISO 15765 CAN (250 kBit/s or 500 kBit/s). The CAN protocol is a popular standard outside of the US automotive industry and is making significant in-roads into the OBD-II market share. By 2008, all vehicles sold in the US will be required to implement CAN, thus eliminating the ambiguity of the existing five signalling protocols.

OBD-II provides access to numerous data from the engine control unit (ECU) and offers a valuable source of information when troubleshooting problems inside a vehicle. The SAE J1979 standard defines a method for requesting various diagnostic data and a list of standard parameters that might be available from the ECU. Following is a list of vehicle diagnostic information you can read from OBD-II. It also shows a sample screen shot from IEIMobile Automotive PC.

- Vehicle speed
- Engine RPM

- Total fuel used (litre since life time)
- High resolution vehicle distance

- Engine coolant temperature
- Vehicle ambient temperature

- Tachograph information
- Total engine hours (h)

- Fuel level (0–100 %)
- Fuel pressure
- Fuel system status

- DTC (Diagnostic Trouble Code)

- Calculated engine load
- Intake air temperature
- Throttle position

- Accelerator pedal position (0–100 %)
- Axle weight (kg)
- Oxygen sensors and status

- Clutch switch (on/off)
- Brake switch (on/off)
- Cruise control (on/off)
- PTO (Status/Mode)

# OBD-II Applications

## Hand-held or PC-based scan tools

- Read simple error codes, possibly without translating the meaning, and reset those error codes
- Access more advanced diagnostics
- Set manufacturer- or vehicle-specific ECU parameters
- Access and control other control units, such as air bag or ABS
- Real-time monitoring or graphing of engine parameters to facilitate diagnosis or tuning

## In-Vehicle data logger

- Capture vehicle data while the vehicle is in normal operation, for later analysis
- Engine and vehicle monitoring under normal operation, for the purpose of diagnosis or tuning
- Auto insurance risk selection. Auto insurance companies offer reduced premiums if OBD-II vehicle data loggers or cameras are installed, and if the driver's behaviour meets requirements

## Fleet management and remote real-time diagnostics

- Monitoring of driver behaviour by fleet vehicle operators
- Real-time vehicle fault alarm and alert
- Enhanced automatic vehicle maintenance

Auto Service

Car Racing

Rental & Insurance

Fleet Management

# SAE J1939 Applications (Support by project basis)

SAE J1939 has been adopted widely by diesel engines. Applications of J1939 now include off-highway, truck, bus, and even some passenger car applications, All J1939 packets contain eight bytes of data and a standard header which contains an index called PGN (Parameter Group Number). J1939 defines standard PGNs to encompass a wide range of automotive, agricultural, construction, marine and off-road vehicle purposes. IEIMobile supports J1939 on a by project basis.

Off-Road

Marine

Construction

Bus & Truck

Diesel Engine

Agricultural



# IEIMobile In-Vehicle Computing Devices Provide Full OBD-II Support

## Bundled OBD-II Connector or Cable

## Pre-installed firmware supports all the most popular in-vehicle bus standards and protocols

- The protocol firmware automatically scans the vehicle bus to check and confirm what protocol its connected vehicle supports
- The protocol firmware acts as a converter between vehicle bus and user application software
- User application software sends requests to the protocol firmware to access vehicle bus data

## Complete Software Development Kits (SDK)

- Software Library provides easy-to-use Application Programming Interfaces (API's) for application software programming
- Demo source code for reference
- Support SAE J1979 standard to access OBD-II data and code
- Complete user manual for programming

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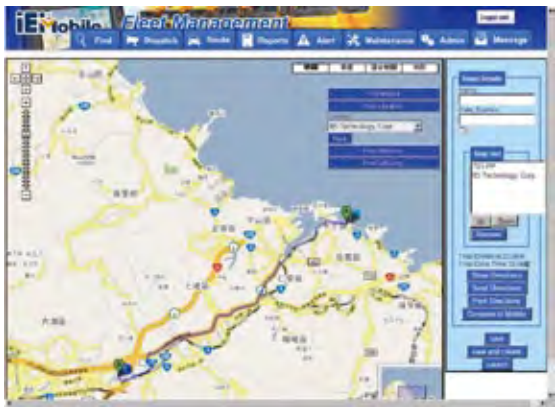
# Fleet Management System (FMS)

Fleet management can include a range of functions, such as vehicle financing, vehicle maintenance, vehicle telematics (tracking and diagnostics), driver management, fuel management and health & safety management. It can remove or minimize the risks associated with vehicle investment, improving efficiency, productivity and reducing their overall transportation costs. A main function of the fleet management software is to gather, store, process, monitor, report on and export information. The most basic function in all fleet management systems is the vehicle tracking component which is usually GPS based.

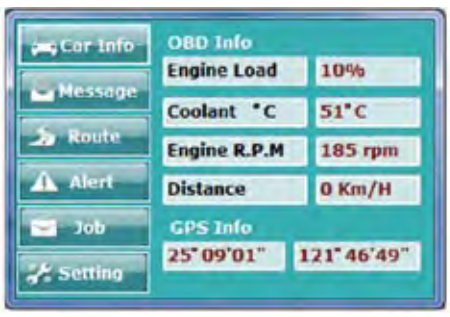
## IEI FMS Architecture

IEIMobile in-vehicle computing solutions provides free fleet management software demo, the IEI FMS. This software is based on client/server architecture. The server-side software is contained in the bundled CD to be installed in Windows® desktop PC. The client-side software is pre-installed in each IEIMobile in-vehicle computing device. IEI FMS demonstrates most basic function of fleet management software such as to gather, store, process, monitor, report on and export information.

### Server-side Screen Shot



### Client-side Screen Shot



# Automotive PC

New

New

| Model | | iKarPC | iKarPC-Lite | VTT-1000 | VTT-1000-WiFi | AVL-2000 | AVL-3000 |
|---|---|---|---|---|---|---|---|
| Display | LCD Size | 8" TFT-LCD (Sunlight readable) | 7" TFT-LCD | 3.5" TFT-LCD | 3.5" TFT-LCD | N/A | N/A |
| | Brightness (cd/m²) | 600 cd/m² High Brightness | 500 cd/m² High Brightness | 450 cd/m² | 450 cd/m² | N/A | N/A |
| | Max Resolution | 800 x 480 pixels WVGA | 800 x 480 pixels WVGA | 320 x 240 pixels QVGA | 320 x 240 pixels QVGA | N/A | N/A |
| | Viewing Angle | 60/60/50/50 Deg. | 60/70/70/70 Deg. | 50/55/60/60 Deg. | 50/55/60/60 Deg. | N/A | N/A |
| | Touch Screen | 5-wire Resistive Type Touch | 5-wire Projective Capacitive Type Touch | 4-wire Resistive Type Touch | 4-wire Resistive Type Touch | N/A | N/A |
| System | CPU | Intel® Atom™ Z510 1.1GHz | TI ARM Cortex-A8 AM3715 1GHz | Samsung S3C2416 ARM9 400 MHz | Samsung S3C2416 ARM9 400 MHz | Intel® Atom™ Z510 1.1GHz | Intel® Atom™ N2600 1.6Ghz |
| | Chipset | Intel® US15WP | N/A | N/A | N/A | Intel® US15WP | Intel® NM10 |
| | Operating System | Microsoft® Windows XP Embedded | Android 2.3.4 | Microsoft® Windows CE 6.0 | Microsoft® Windows CE 6.0 | Microsoft® Windows XP Embedded | Windows Embedded Standard 7 E |
| | Memory | 1GB DDR2 533 MHz on board | 4GB iNAND Flash and 512MB DDR SDRAM on board | 128MB DDR2 133MHz on board | 128MB DDR2 133MHz on board | 1GB DDR2 533MHz on board | 2GB DDR3 on board |
| | Storage | 4GB CompactFlash® SD Card Slot | Built-in SD Card Slot (support SD 2.0, max 32GB) | 256MB NAND FLASH microSD Card Slot | 256MB NAND FLASH microSD Card Slot | 4GB CompactFlash® SD Card Slot | 1 x Built-in 16GB SATA SSD 1 x SDXC Slot for data storage |
| Communication | Wireless LAN | Wi-Fi 802.11 b/g/n | Wi-Fi 802.11 b/g/n | N/A | Wi-Fi 802.11 b/g | Wi-Fi 802.11 b/g/n | Wi-Fi 802.11 b/g/n |
| | Bluetooth | Bluetooth 2.1+ EDR (Class I) | Bluetooth 2.1+ EDR (Class I) | N/A | N/A | N/A | Bluetooth V2.0+EDR (Class I) |
| | Data Rate | WCDMA/HSUPA | WCDMA/HSDPA or GPRS | GSM/GPRS | N/A | WCDMA/HSUPA | WCDMA/HSUPA |
| | GPS | GPS w/ Internal Antenna | GPS w/ External Antenna | GPS w/ Internal / External Antenna | GPS w/ Internal / External Antenna | GPS w/ Internal Antenna | GPS |
| Multimedia | Audio | 1 x Line-in 1 x Line-out 1 x 3W Speaker | 1 x Audio out (R+L) (3-pin) 1 x Mic-in (3-pin) | 1 x Line-out 1 x 1.5W Speaker | 1 x Line-out 1 x 1.5W Speaker | 1 x Line-in 1 x Line-out | 1 x Mic-in 1 x Line-out |
| Data Collection | RFID | N/A | 13.56MHz ISO14443A/B | N/A | N/A | ISO 18000-6C UHF RFID (optional) | ISO 18000-6C UHF RFID (optional) |
| | Video Capturing | N/A | N/A | N/A | N/A | Video Input : 4 channels composite video (NTSC/PAL/SECAM) | Video Input : 4 channels composite video (NTSC/PAL/SECAM) |
| | Camera | 0.3 Megapixels CMOS Camera | 3 Megapixels CMOS Camera | N/A | N/A | N/A | N/A |
| | SW Compression | N/A | N/A | N/A | N/A | N/A | Yes (optional) |
| LED Indicators & Buttons | Indicators | Wi-Fi/Bluetooth/ HDD/3.75G/DVB-T/Power Status LED | 3.5G/Wi-Fi/BT/Power Status LED | Power/GPS/2.5G Status LED | Power/GPS/2.5G Status LED | UHF/Wi-Fi/ Bluetooth/422/485/ HDD/3.75G/BAT/Power Status LED | 1 x Power LED |
| | Hot Keys & Buttons | F1~F6 Function Key, Navigation Key, Power Button | 4 x Function key | 7 x Programmeable Keys , Power Button, Reset Button | 7 x Programmeable Keys , Power Button, Reset Button | Power Button | Power Button |
| I/O Interface | USB | 2 x USB 2.0 Full Speed | 2 x USB 2.0 Full Speed | 1 x Mini USB 1.1 | 1 x Mini USB 1.1 | 2 x USB 2.0 Full Speed | 4 x USB 2.0 |
| | Serial | 1 x DB-9 OBD-II 1 x DB-9 RS-232/422/485 (Software selectable w/ 5V DC) 5V DC | 1 x OBD-II (7-pin) 1 x USB (4-pin) 1 x RS-232 (9-pin) | 1 x OBD-II 1 x RS-232 | 1 x OBD-II 1 x RS-232 | 1 x DB-9 OBD-II 1 x DB-9 RS-232/422/485 | 1 x OBD-II 6 x COM port: DB-9 (COM1), RS-422/485 (COM4, 4-pin), DB-37 (COM7~COM10) |
| | LAN | 1 x 10/100/1000 Mbps GbE RJ-45 | 1 x 10/100/1000 Mbps GbE (4-pin) | N/A | N/A | 1 x 10/100/1000 Mbps GbE RJ-45 | 1 x 10/100/1000 Mbps GbE RJ-45 |
| | VGA | N/A | N/A | N/A | N/A | 1 x VGA | 1 x VGA supports up to 1920x1200 |
| | CAN | N/A | 1 x CAN-bus 2.0B (2-pin) | N/A | 1 x CAN-bus 2.0B | 1 x CAN-bus | N/A |
| | Remote Control | Yes | N/A | N/A | N/A | N/A | N/A |
| | Digital I/O | N/A | 2 Input (3-pin) / 2 Output (3-pin) | 2 Input / 2 Output | 2 Input / 2 Output | 4 Input / 4 Output | 4 Input / 4 Output |
| | RJ-12 | N/A | N/A | N/A | N/A | N/A | 1 X RJ11 3.5G Voice |
| | HDMI | N/A | N/A | N/A | N/A | N/A | 1 x HDMI |
| Power | Cigarette Lighter Power | Cigarette Lighter Power Cable DC 9~30V | Cigarette Lighter Power Cable DC 9~36V | Cigarette Lighter Power Cable DC 9~30V | Cigarette Lighter Power Cable DC 9~30V | Cigarette Lighter Power Cable DC 9~30V | Cigarette Lighter Power Cable |
| | ACC Power | ACC power on/off mode with software configurable delay time | ACC power on/off mode with software configurable delay time | N/A | N/A | ACC power on/off mode with software configurable delay time | ACC power on/off mode with software configurable delay time |
| Environment | Operating Temperature | -20˚C to +60˚C | -20˚C to +60˚C | -20˚C to +70˚C | -20˚C to +70˚C | -20˚C to +70˚C | -20˚C to +70˚C |
| | Storage Temperature | -30˚C to +70˚C | -30˚C to +70˚C | -30˚C to +80˚C | -30˚C to +80˚C | -30˚C to +80˚C | -30˚C to +80˚C |
| | Humidity | 5%~95% non-condensing | 5%~95% non-condensing | 5%~95% non-condensing | 5%~95% non-condensing | 5%~95% non-condensing | 5%~95% non-condensing |
| | Drop Survival | 1M | 1M | 1M | 1M | N/A | N/A |
| | Environmental Protection | IP 54 compliant front panel (Water,dust and splash resistant) | IP 54 compliant front panel (Water, dust and splash resistant) | IP 54 compliant front panel (Water,dust and splash resistant) | IP 54 compliant front panel (Water,dust and splash resistant) | N/A | N/A |
| | Certifications | CE/FCC/e-MARK/ ISO7637 | CE/FCC/e-MARK/ ISO7637 | CE/FCC/e-MARK/ ISO7637 | CE/FCC/e-MARK/ ISO7637 | CE/FCC/e-MARK/ ISO7637 | CE/FCC/e-MARK/ISO7637 |
| Physical Characteristics | Dimensions (LxWxH) (mm) | 261 x 162 x 44 | 210 x 154 x 28 | 128 x 89 x 32 | 128 x 89 x 32 | 200 x 155 x 70 | 200 x 150 x 76 |
| | Net Weight | 1.7kg | 0.8kg | 0.17kg | 0.17kg | 1.9kg | 2.0kg |





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# iKarPC

## Vehicle Computer Series

- 8" TFT sunlight readable LCD touch screen
- Intel® Atom™ Z510 1.1 GHz processor
- Pre-installed Windows® XP Embedded
- Built-in HSUPA/GPRS/GSM, Wi-Fi and Bluetooth
- Built-in 32-channel GPS Receiver
- Supports On-Board Diagnostics (OBD)

COMPUTEX TAIPEI 2011 BEST CHOICE

OBD-II | 3.75G/ HSUPA | Bluetooth | Wi-Fi | Fanless | Operating Temperature | High Brightness | Touchscreen | Camera | intel Intelligent Systems Alliance

## Diverse Connectivity

### WWAN 2.5G/3.5G/3.75G

- Efficient mobile connectivity for GPS map download and high quality video/audio stream.
- Supports WCDMA/CDMA2000/TD-SCDMA

### Supported Bands

- HSUPA/HSPA/UMTS-800/850/900/1900/2100 MHz
- Quad-band EDGE/GPRS/GSM-850/900/1800/1900 MHz
- Dual-band EV-DO/CDMA

### GPS

Travel navigation, real-time locating and path tracking.

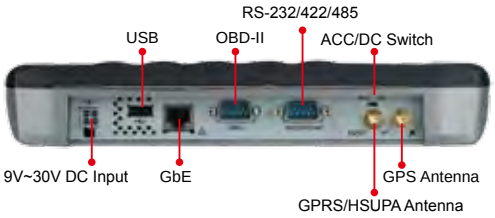
- 32-channel engine
- TTFF (Time to First Fix) < 1 sec for hot and aided starts
- -160dBm SuperSense sensitivity
- A-GPS service by accessing to assistance ephemeris data server via internet or mobile connectivity

### Bluetooth V2.0 + EDR Class 1

Efficient mobile connectivity for GPS map download and high quality video/audio stream.

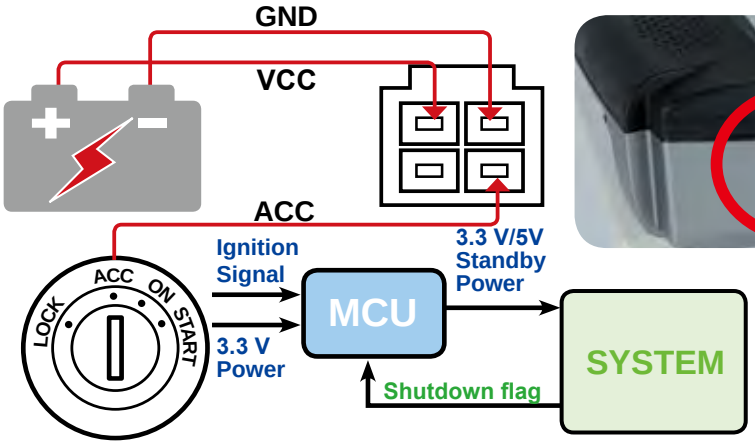
### 802.11b/g/n Wi-Fi

Best for near field data synchronization or ad-hoc communication when vehicle park in parking space or dock.



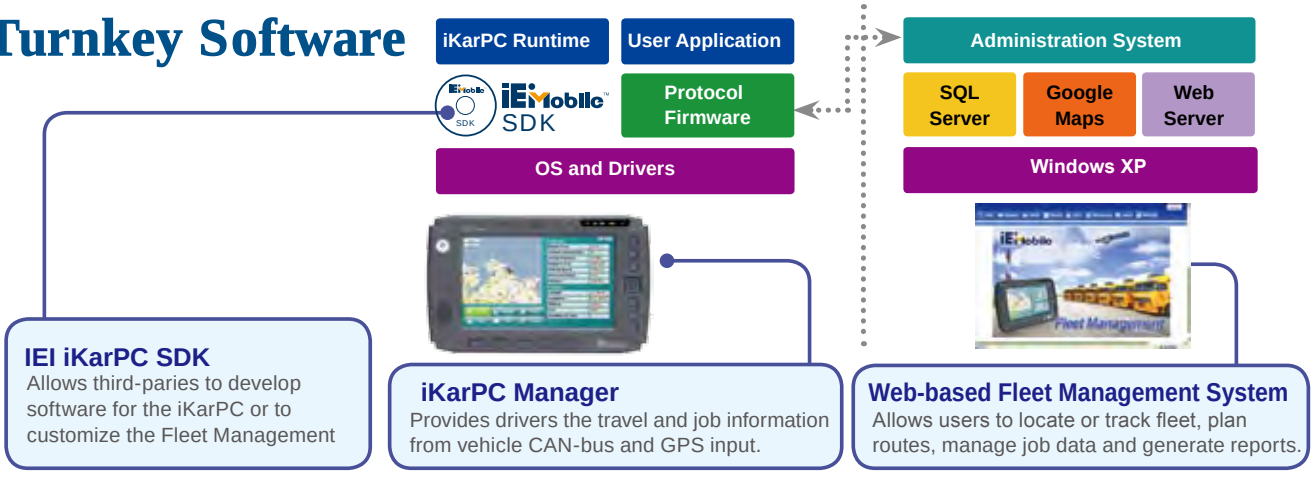
**Infrared Remote Control**

# Vehicle Power Management



- The special MCU enables system to automatically reboot or shutdown based on the adjustable delay time by detecting ACC status.
- Surge protection and low power consumption hardware design

# Turnkey Software


iKarPC Runtime
User Application
Administration System
iEiMobile SDK
Protocol Firmware
SQL Server
Google Maps
Web Server
OS and Drivers
Windows XP
IEI iKarPC SDK
Allows third-paries to develop software for the iKarPC or to customize the Fleet Management
iKarPC Manager
Provides drivers the travel and job information from vehicle CAN-bus and GPS input.
Web-based Fleet Management System
Allows users to locate or track fleet, plan routes, manage job data and generate reports.





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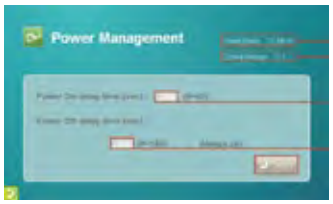
## Setting

Use the Setting page to adjust the setting of audio volume, LCD brightness, power on/off delay time, embedded module and function keys.




## Power Management

When the vehicle ignition switch is turned to ACC or ON state, the iKarPC will automatically turn on off after a certain time delay.

## Module On/Off

Use the Module On/Off page to enable or disable the embedded modules, including Bluetooth, Wi-Fi, DVB-T, 3.75G connection and webcam.

## Programmable Function Key

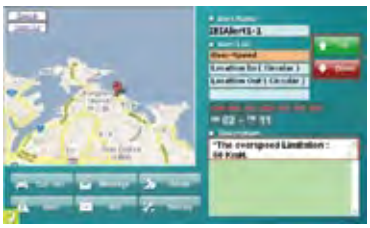
The iKarPC provides SDK for customers to define and program their own Function Keys.

# Fleet Management Software

The Fleet Management is an advanced, end-to-end, web-based software for data collection and communication. It combines all the information from CAN-bus and GPS input in one easy-to-navigate interface. Pre-installed in the iKarPC, it is integrated with OBD-II diagnose tool to provide a comprehensive remote performance monitoring envelope for vehicles.

## Car Information

Show the vehicle information gathered through the OBD cable to the iKarPC and display the GPS information.

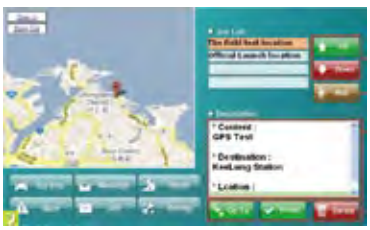


## Alert

Click the Alert button to view the alerts from the management center.

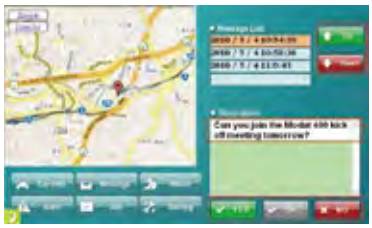
## Route

View the route plan from the back-end management center.
Click the Map button to bring up the map of the route plan.
.



## Job

Click the Job button to view the Job assignment from the management center.



## Message

Show the messages from the back-end management center.
Use up and down buttons or click a message from the message list to view the message.

## Setting

Use the Setting page to input the server IP address of the back-end management center to the iKarPC. The unique number of SIM card is used as the identification number of the iKarPC.

# One Key Recovery

Without having to go through complicated settings, IEI One Key Recovery uses exclusive technology to recover and backup your system with just one click.

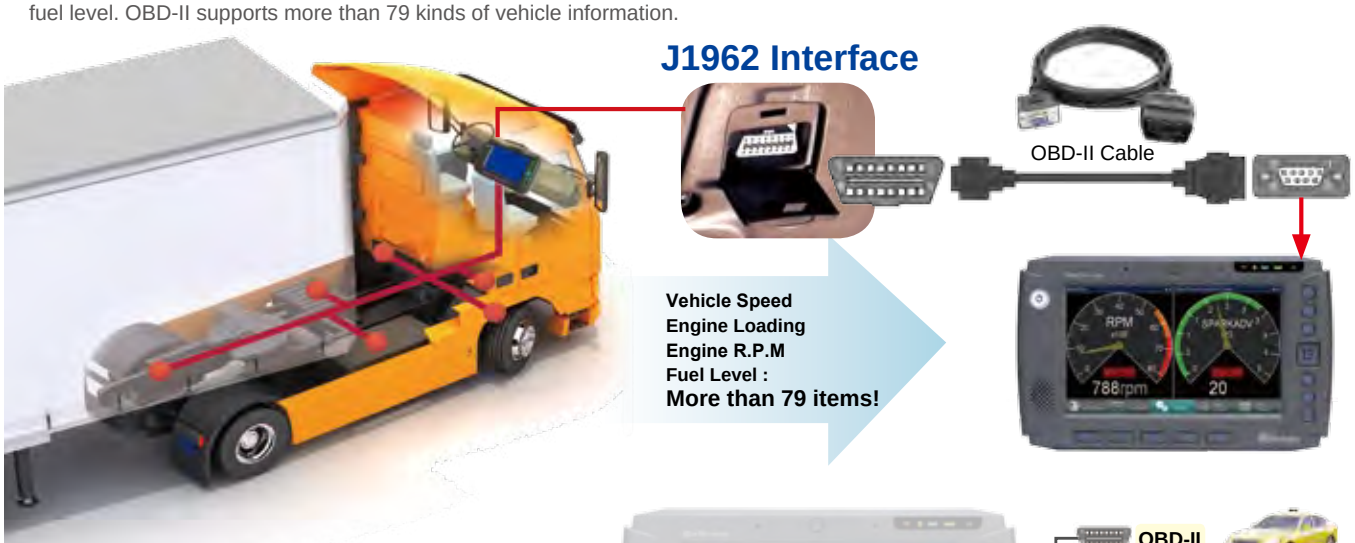
**Recover the system from**

- Severe virus attack
- Operating system crash
- Man-made disasters

IEI Recovery Kit

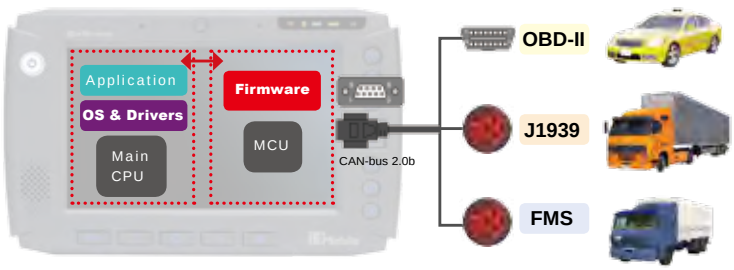
# Vehicle Bus Protocol (OBD-II)

A vehicle bus protocol is a specialized internal communications network that interconnects components inside a vehicle. It also provides interface for users to acquire vehicle data for diagnostic or cruise information such as vehicle speed, engine loading, engine R.P.M and fuel level. OBD-II supports more than 79 kinds of vehicle information.




## Physical Connection Interface

The vehicle bus connection is mostly based on CAN-bus 2.0b signaling via a specific connection interface. For example, OBD-II defines the J1962 female 16-pin (2x8) connector as its physical interface while J1939 defines the 9-pin round connector.




## On-Board Diagnostics (OBD-II)

OBD-II is a standard that specifies the type of diagnostic connector and its pin-out, the electrical signaling protocols available, and the messaging format. There are five signalling protocols currently in use with the OBD-II interface. Any given vehicle will likely only implement one of the protocols. The iKarPC supports ISO 15765 CAN (250 kBit/s or 500 kBit/s). The CAN protocol is a popular standard outside of the US automotive industry and is making significant in-roads into the OBD-II market share. By 2008, all vehicles sold in the US are required to implement CAN, thus eliminating the ambiguity of the existing five signaling protocols. The CAN signals are via pin-6 and pin-14 of the OBD-II connector.

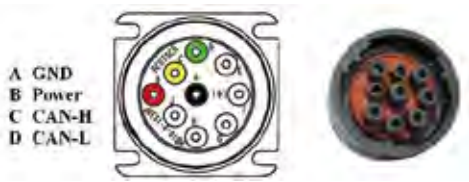
| Pin | Description |
|---|---|
| 1 | - |
| 2 | Bus positive Line of SAE-J1850 PWM and SAE-1850 VPW |
| 3 | - |
| 4 | - |
| 5 | - |
| 6 | CAN high (ISO 15765-4 and SAE-J2284) |
| 7 | K line of ISO 9141-2 and ISO 14230-4 |
| 8 | - |
| 9 | - |
| 10 | Bus negative Line of SAE-J1850 PWM only (not SAE-1850 VPW) |
| 11 | - |
| 12 | - |
| 13 | - |
| 14 | CAN low (ISO 15765-4 and SAE-J2284) |
| 15 | L line of ISO 9141-2 and ISO 14230-4 |
| 16 | - |

## OBD-II/J1939/FMS Vehicle Bus Protocol

The vehicle bus protocol deals with special request for data transmission reliability and quality on vehicle bus. The MCU inside the iKarPC acts as a converter among these protocols. The OBD-II is mostly for small car diagnostics while the SAE J1939 is implemented for off-road vehicles with diesel engines and the FMS is for commercial trucks or buses. As a standard offering, IEIMobile supports OBD-II protocol. Other protocols such as FMS and J1939 are supported on a optional by project basis.

## SAE J1939 (Spport by project basis)

- SAE J1939 has been adopted widely by diesel engines. Applications of J1939 now include off-highway, truck, bus, and even some passenger car applications.
- SAE J1939 defines five layers in the 7-layer OSI network model, and this includes the CAN 2.0b specification (using only the 29-bit/"extended" identifier) for the physical and data-link layers. The session and presentation layers are not part of the specification.
- All J1939 packets contain eight bytes of data and a standard header which contains an index called PGN (Parameter Group Number). J1939 defines standard PGNs to encompass a wide range of automotive, agricultural, construction, marine and off-road vehicle purposes.





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# Applications

## IPCAM Applications

IP camera is a type of digital video camera commonly employed for surveillance. Unlike analog closed-circuit television (CCTV) cameras, it can send and receive data via a computer network and the Internet.

iKarPC can monitor and record vehicle status through IPCAM.

## OBD-II Applications

Auto Service

Car Racing

Rental & Insurance

Fleet Management

## SAE J1939 Applications (Support by Project)

Off-Road

Marine

Construction

Bus & Truck

Diesel Engine

Agricultural

# Certification

## Vibration Test

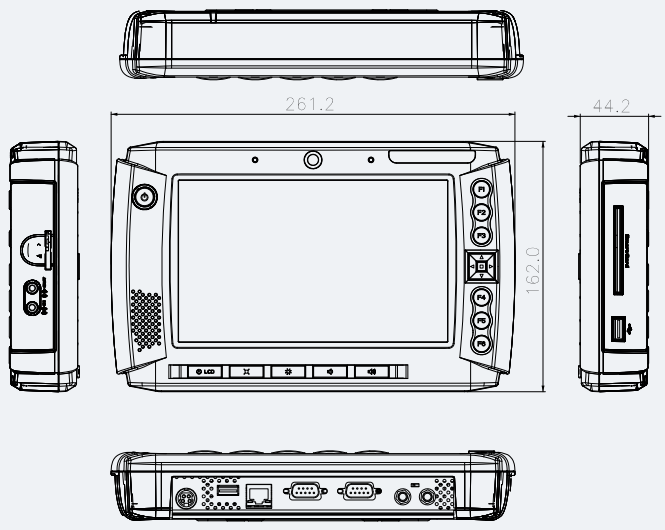
**Follow MIL-STD-810F 514.5C-1**

| | Operating Random Vibration Mode | Non-Operating Sine Mode |
|---|---|---|
| Rules | (MIL-STD-810F 514.5C-1) | IEC-60068-2-06 |
| | Axis: 3 axes / Vertical / Transverse / Longitudinal. 10-500 Hz, 60min/axis | Axis: 3 axes / Vertical / Transverse / Longitudinal .2. 0.4in. p-p, 10-55Hz |

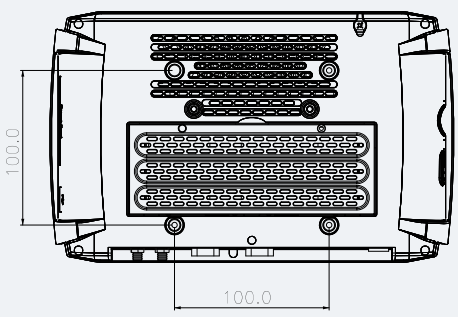
## Shock Test

**Reference IEC68-2-27 Testing Procedures**

| | Operating | Non-Operating |
|---|---|---|
| Rules | Operating Shock Half-Sine Wave Shock | Non-Operating Shock Half-Sine Wave Shock |
| | Acceleration 5 G | Acceleration 15 G |




*Dimensions*
*(Unit: mm)*



## Specifications

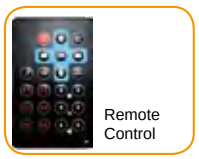
| Model | iKarPC | |
|---|---|---|
| Display | LCD Size | 8" TFT-LCD (Sunlight readable) |
| | Brightness (cd/m2) | 600 cd/m2 High Brightness |
| | Max Resolution | 800 x 480 pixels WVGA |
| | Viewing Angle | 60/60/50/50 Deg. |
| | Touch Screen | 5-wire resistive type touch |
| System | CPU | Intel® Atom™ Z510 1.1 GHz |
| | Chipset | Intel® US15WP |
| | Operating System | Microsoft® Windows® XP Embedded |
| | Memory | 1 GB DDR2 533 MHz On-board |
| | Storage | 4 GB CompactFlash®<br>SD Card Slot |
| Communication | Wireless LAN | Wi-Fi 802.11 b/g/n |
| | Bluetooth | Bluetooth V2.0+ EDR (Class 1) |
| | Modem | WCDMA/HSUPA |
| | GPS | GPS |
| Multimedia | Audio | 1 x Line-in<br>1 x Line-out<br>1 x 3 W Speaker |
| | Camera | 0.3 megapixels CMOS Camera |
| LED Indicators & Buttons | Indicators | Wi-Fi/Bluetooth/HDD/3.75G/DVB-T/Power Status LED |
| | Hot Key & Buttons | F1~F6 Function Key, Direction Key, Power Button |
| I/O Interface | USB | 2 x USB 2.0 |
| | Serial | 1 x DB-9 OBD-II<br>1 x DB-9 RS-232/422/485 (Software selectable w/ 5V DC) |
| | LAN | 1 x 10/100/1000 Mbps GbE RJ-45 |
| Power | Cigarette Lighter Power | Cigarette Lighter Power Cable DC 9~30V |
| | ACC Power | Manual power mode and ignition detection supported ACC power on/off mode with software configurable delay time |
| Environment | Operating Temperature | -20˚C ~ +60˚C |
| | Storage Temperature | -30˚C ~ +70˚C |
| | Humidity | 5%~95% non-condensing |
| | Drop Survival | 1 M |
| | Environmental Protection | IP54 compliant front panel (Water, dust and splash resistant) |
| | Certification | CE/FCC/e-Mark/ISO7637 |
| Physical Characteristics | Dimensions (LxWxH) (mm) | 261 x 162 x 44 |
| | Net Weight | 1.7kg |

## Ordering Information

| Part Number | Description |
|---|---|
| IKARPC-W08A-510-HU-R12 | 8.0" TFT-LCD 600 cd/m² WVGA In Vehicle PC with Intel® Atom™ Z510 1.1GHz CPU, 1GB SDRAM, 802.11 b/g/n Wireless, Bluetooth, HSUPA, OBD-II, Touch screen, 0.3 Megapixel Camera, XPE OS, 4GB CF, RoHS |
| IKARPC-W08A-510-HW-R12 | 8.0" TFT-LCD 600 cd/m² WVGA In Vehicle PC with Intel® Atom™ Z510 1.1GHz CPU, 1GB SDRAM, 802.11 b/g/n Wireless, Bluetooth, HUAWEI HSUPA, OBD-II, Touch screen, 0.3 Megapixel Camera, XPE OS, 4GB CF, RoHS |

## Packing List

| Item | Part Number | Q'ty |
|---|---|---|
| Remote Controller | 7Z000-8T00322ICP06G-RS | 1 |
| GPS/3.75G Integrate Antenna | 32506-000100-100-RS | 1 |
| ACC Power Cable | 32002-001900-100-RS | 1 |
| Cigarette Lighter Power Cable | 32002-004000-100-RS | 1 |
| OBD-II Cable | 32025-000300-100-RS | 1 |
| J1939 Cable | 32025-000400-100-RS | 1 |
| Uesr's Manual CD-ROM | IEI-7B000-000544-RS | 1 |
| IEI One Key Recovery CD | IEI-7B000-000478-RS | 1 |


Remote Control

OBD-II Cable

ACC Power Cable

GPS / 3.75G Integrate Antenna

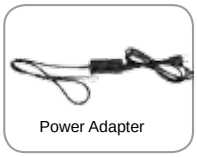
Cigarette Lighter Power Cable

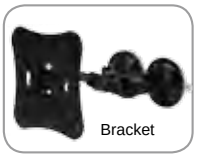
J1939 Cable

## Optional Accessory List

| Item | Part Number | Description |
|---|---|---|
| Power Adapter | IVIPOWER-4PIN-R10 | Power Adapter, PFC; Vin:90~264VAC; 60W; Vout: 12VDC; Din 4Pin/lock; CCL; RoHS |
| Bracket | iKarPC-W08A-MK01-R10 | iKarPC 100 x 100 VESA mount kit |
| Bracket | iKarPC-W08A-MK02-R10 | iKarPC ram-mount 100 x 100 VESA mount kit |

Ram Mount


Power Adapter


Bracket

## Support Function

| Part Number | Wireless | Bluetooth | GPS | 3.75G | OS |
|---|---|---|---|---|---|
| iKarPC-W08A-510-HU-R12 | 802.11 b/g/n | V2.0+EDR, Class 1 | U-blox | Qualcomm | XPE |
| iKarPC-W08A-510-HW-R12 | 802.11 b/g/n | V2.0+EDR, Class 1 | U-blox | HUAWEI | XPE |

# iKarPC Lite

New

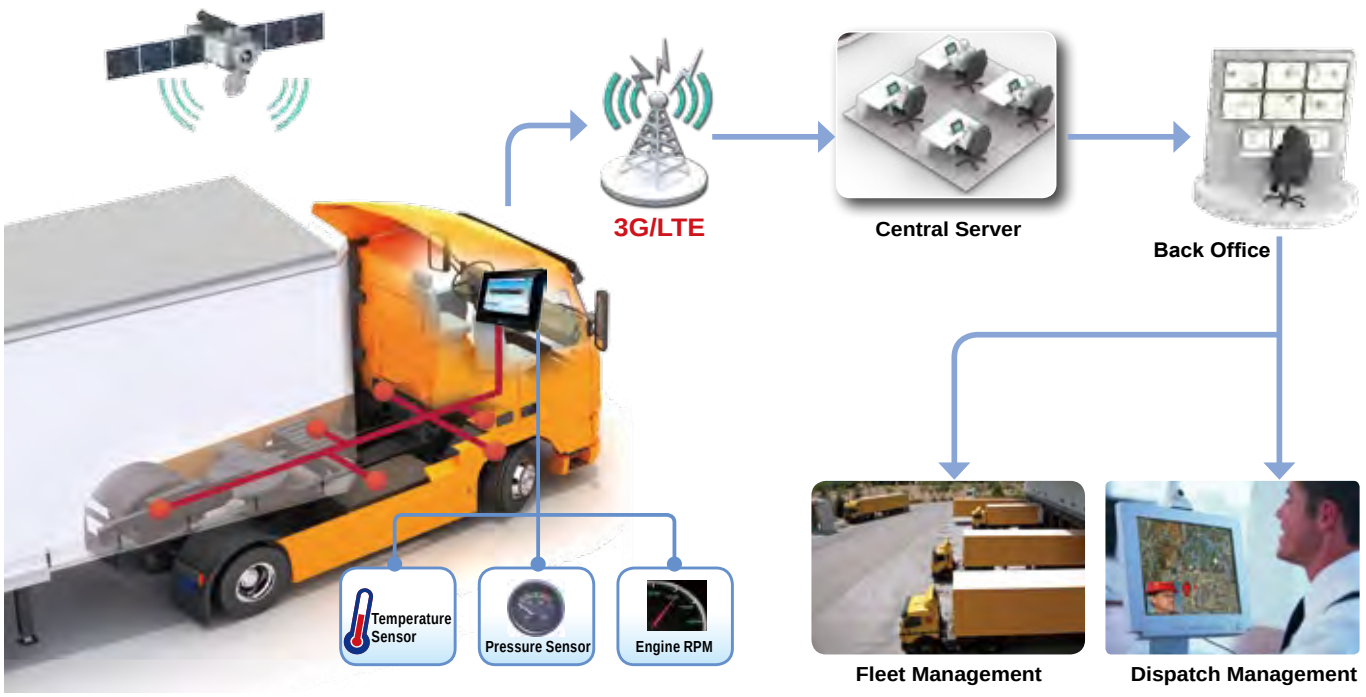
## Vehicle Computer Series

- 7" TFT sunlight readable TFT LCD with projective capacitive touchscreen
- TI ARM Cortex-A8 AM3715 1GHz
- Pre-installed Android 2.3.4 Operating System
- Built-in HSUPA/GPRS/GSM, Wi-Fi and Bluetooth
- Built-in GPS receiver
- Supports On-Board Diagnostics: one CAN 2.0B or OBD-II
- On-board RFID with antenna

OBD-II | 3.75G/ HSUPA | Bluetooth | Wi-Fi | Fanless | Operating Temperature | High Brightness | Touchscreen | Camera | Android

## Applications

IEIMobile's new Android rugged infotainment car PC is pointing to dramatic changes in the field use of mobile devices thanks to the superior touch screen performance and integrated functionality.



# Power Saving and Trendy Platform

## TI Cortex-A8 CPU

- TI's Sitara™ family of highly-integrated ARM9™ and ARM Cortex™-A8 microprocessor portfolio offers various combinations of high-performance and low power levels, providing the ability to create an array of products using a common hardware and software platform.
- Reduce system risks and accelerate time to market using standard and comprehensive ARM-based software development tools.
- TI is the largest ARM core licensee supporting all major high-level operating systems such as Android and Windows CE.

### Sitara™ offers

**Performance**
- Up to 450MHz ARM9 to 1.5GHz Cortex-A8 devices
- Industry's first widely available Cortex-A8 devices - 2DMIPS per MHz
- Graphics acceleration up to 27M polygons/s performance for advanced user interface
- High speed DDR2 and DDR3 memory performance

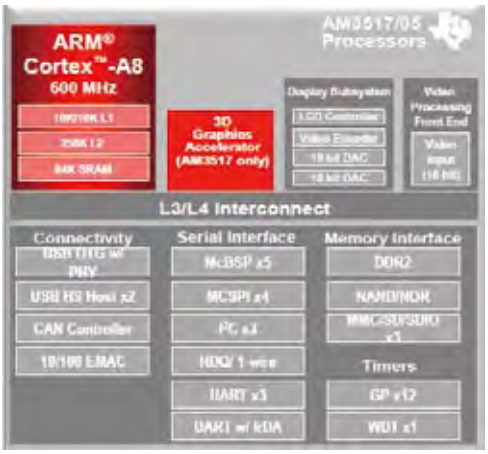
**Connectivity**
- 10/100/1000 Mbps Ethernet
- CAN 2.0 and high speed USB interface
- Multiple serial port options per device
- **Cost effective** processor with SATA interface
- Flexible LCD controller for up to 720p displays and moving to 1080p in future devices
- Industrial peripheral support

### AM3517/05 Cortex™ -A8 based processors

**Benefits**
- Support OS such as Linux, Win CE, RTOS
- 10M polygons/second for robust GUIs
- Multi windows overlay for hardware accelerated user

**Power**
- Total Power: L700mW
- Standby Power: 12mW

**Suggested Applications**
- Industrial/Home automation
- Point of service




## Android 2.3.4 Operating System

- Android is an operating system for mobile devices such as smartphones and tablet computers. It is developed by the Open Handset Alliance led by Google.
- Android was listed as the best-selling smartphone platform worldwide in Q4 2010 by Canalys with over 200 million Android devices in use by November 2011.
- 2.3 Gingerbread refined the user interface, improved the soft keyboard and copy/paste features, improved gaming performance, added SIP support (VoIP calls), and added support for Near Field Communication.

# Seamless Wireless Communication

The iKarPC-Lite excels on the wireless side. There's 802.11b/g/n WiFi, Bluetooth version 2.1, a vehicle-specific GPS receiver could provide drivers communications capabilities and precisely positioning.

## Local-Area Communication

Wi-Fi

Compliant with the 802.11 b/g/n. This feature allows fast data transfer for near field or ad-hoc data communication.

## Peripheral Communication

Bluetooth

Compliant with the Bluetooth 2.1+EDR specification. This feature ensures easy and quick access to nearby peripherals.

## Wide-Area Mobile Communication

3.5G/ HSUPA

With up to 3.5G wireless technology, outfield workers can maintain and share constant contact with the back office.

## Vehicle-specific GPS receiver: Ublox LEA 6 series

High sensitivity, multi GNSS1)receivers with low power consumption
- Standalone GNSS: no host integration required
- Highest accuracy in urban areas
- Jamming detection and elimination
- Meets demanding automotive requirements

| Parameter | Specification | |
|---|---|---|
| Receiver type | 50 chaneels<br>GPS L1 frequency, C/A code<br>GALILEO Open Service Capable<br>GLONASS FDMA<br>SBAS: WAAS, EGNOS, MSAS | |
| Tim-To-First-Fix | Cold Start (W/o Aiding)<br>Warm start(W/o Aiding)<br>Hot Start(W/o Aiding)<br>Aided Start | 26s<br>26s<br>1s<br>1s |
| Sensitivity | Tracking & Navigation<br>Reacquisition<br>Cold Start(W/o Aiding) | -162 dBm<br>-160 dBm<br>-148 dBm |





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# GNSS New Topic - eCall and ERA-Glonass Systems

Emergency response systems for road accidents in EU and Russia
- Emergency call generated following an accident using GSM service
- In-vehicle emergency system (IVS) creates emergency call (voice and data like position and car info) to the nearest Public Safety Answering Point (PSAP)

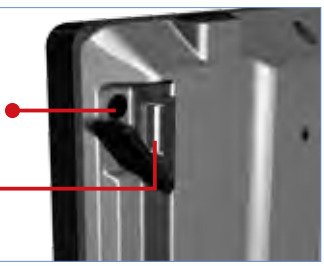
■ Fundamentals of the two systems are the same
■ Main differences are:
- Positioning technology (GPS or Glonass)
- SMS allowed as backup in ERA-Glonass system

■ Both systems use 3GPP specified In-Band modem technology to send data and voice on the same channel
■ Expected rollout
- eCall: 2014
- ERA-Glonass2013

# I/O Expansions

Screwable USB connector for function expansion, ie. external barcode scanner, external smart card reader.

USB host provides more expansion capability.



- 2 x D/I (3-pin)
- 2 x D/O (3-pin)
- 1 x OBD-II (7-pin)
- 2 x CAN2.0B (2-pin)
- USB (4-pin)
- CTS CSI-3584-2010

- Video in x1 (2-pin)
- Ethernet x1 (4-pin)
- RS-232 x1 (9-pin)
- Audio out (R+L) x1 (3-pin)
- Mic in x1 (3-pin)

- SD card slot for extra storage expansion
- SIM card -> easy installation

# Ultimate Form Factor- Meet Vehicle Standard

## Operating Temperature -20°C ~ 60°C

The system can operate in a wide range of temperatures

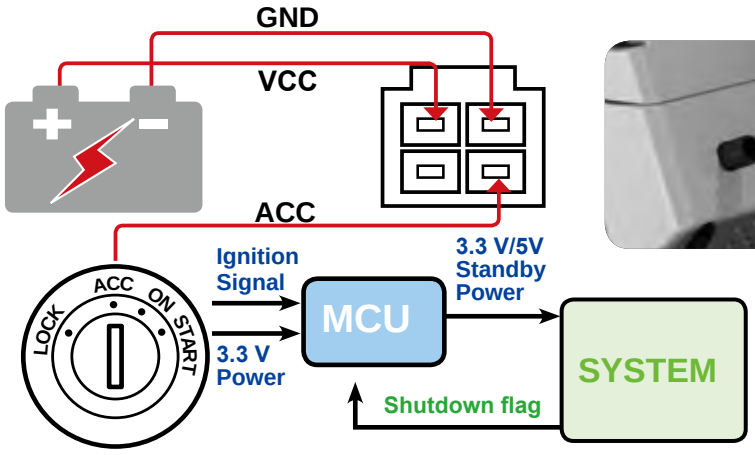
## Storage Temperature -30°C ~ 70°C

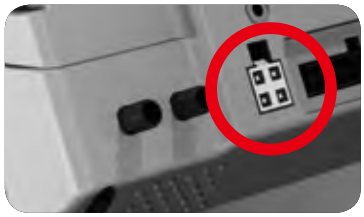
The system can be stored in a wide range of temperatures

## IP 54 Rating

Dust tight and protected against water splashed against the component from any direction

# Vehicle Power Management



**4-pin power connector**

- The special MCU enables system to automatically reboot or shutdown based on the adjustable delay time by detecting ACC status.
- Surge protection and low power consumption hardware design

# Specifications

| Model | | iKarPC-Lite |
|---|---|---|
| Display | LCD Size | 7" TFT LCD with LED backlight |
| | Brightness (cd/m²) | 500 cd/m² high brightness |
| | Max Resolution | 800 x 480 pixels WVGA |
| | Viewing Angle | 60/70/70/70 |
| | Touch Screen | 5-wire projective capacitive type |
| System | CPU | TI ARM Cortex A8 AM3715 1GHz |
| | Operating System | Android 2.3.4 |
| | Memory | 4GB iNAND flash and 512 MB DDR SDRAM on board |
| | Storage | Built-in SD card slot (supports SD 2.0, max. 32GB) |
| Communication | Wireless LAN | Wi-Fi 802.11 b/g/n |
| | Bluetooth | Bluetooth® 2.1+ EDR (Class I) |
| | Data Rate | WCDMA/HSDPA or GPRS |
| | GPS | GPS w/ external antenna |
| Multimedia | Audio | 1 x Audio out (R+L) (3-pin)<br>1 x Mic-in (3-pin) |
| Data Collection | RFID | 13.56MHz ISO14443 A/B Read-Write Capable<br>ISO14443A (Mifare)<br>ISO14443B (Felica) |
| | Camera | 2 Megapixels CMOS Camera |
| LED Indicators & Buttons | Indicators | 3.5G/Wi-Fi/BT/Power status LED |
| | Hot Keys & Buttons | 4 x Function keys |
| I/O Interface | USB | 2 x USB 2.0 Full Speed |
| | Serial | 1 x OBD-II (7-pin)<br>1 x USB (4-pin)<br>1 x RS-232 (9-pin) |
| | LAN | 1 x 10/100/1000 Mbps GbE (4-pin) |
| | CAN | 1 x CAN2.0B (2-pin) |
| | Digital I/O | 2-bit input (3-pin), 2-bit output (3-pin) |
| Power | Cigarette Lighter Power | Cigarette lighter power cable DC 9~36V |
| | ACC Power | ACC power on/off mode with software configurable delay time |
| Environment | Operating Temperature | -20ºC to +60ºC |
| | Storage Temperature | -30ºC to +70ºC |
| | Humidity | 5%~95%, non-condensing |
| | Drop Survival | 1M |
| | Environmental Protection | IP 54 compliant front panel (water, dust and splash resistant) |
| | Certifications | CE/FCC/e-MARK/ISO7637 |
| Physical Characteristics | Dimensions (LxWxH) (mm) | 210 x 154 x 28 |
| | Net Weight | 0.8kg |

# Ordering Information

| Part Number | Description |
|---|---|
| IKARPC-07A-A8-R10 | 7" 500 cd/m² In-Vehicle Panel PC with TI Cortex-A8 AM3715 Processor, 1GHz , 4GB iNAND flash, 512 MB DDR SDRAM, OBD-II, HSUPA , GPS, Wi-Fi b/g/n, BT 2.1, 2 Megapixels Camera, RoHS |

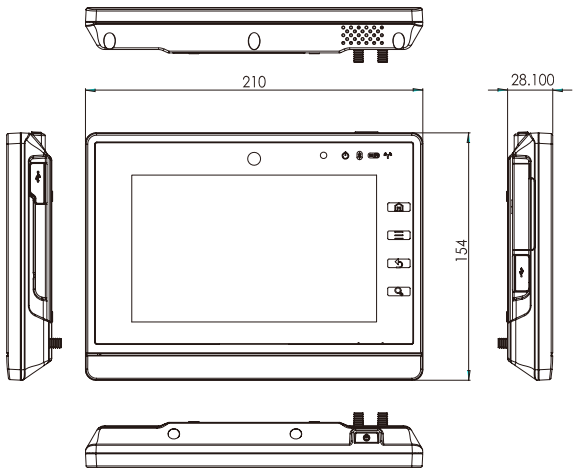
# Packing List

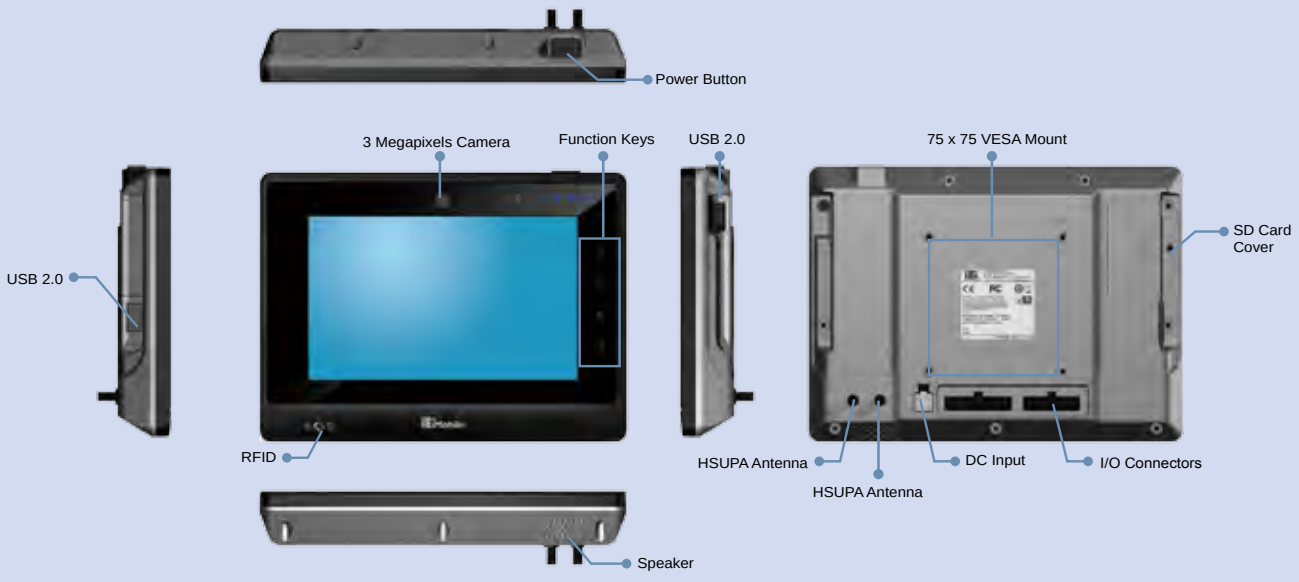
| Item | Part Number | Q'ty |
|---|---|---|
| IKARPC-Lite | IKARPC-07A-A8-R10 | 1 |
| 3.75G+GPS Antenna | 32503-000100-100-RS | 1 |
| ACC Power Cable | 32002-000901-100-RS | 1 |
| Cigarette Lighter Power Cable | 32002-001700-100-RS | 1 |

# Optional Accessory List

| Item | Part Number | Description |
|---|---|---|
| Power Adapter | IVIPOWER-4PIN-R10 | Power Adapter; 63000-FSP040DGAA1107-RS + Switching Cable 32002-005100-100-RS |

# Dimensions *(Unit: mm)*



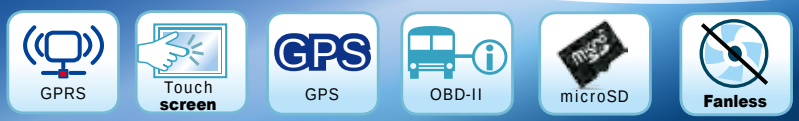
# VTT-1000

## Vehicle Tracking Terminal

- 3.5” TFT LCD touch screen
- Embedded with ARM9 400MHz CPU
- Pre-installed Windows® CE 6.0
- Built-in GSM/GPRS and antenna
- SiRF Star III 20-channel GPS receiver
- Supports On-Board Diagnostics (OBD)

ARM

Windows CE.net

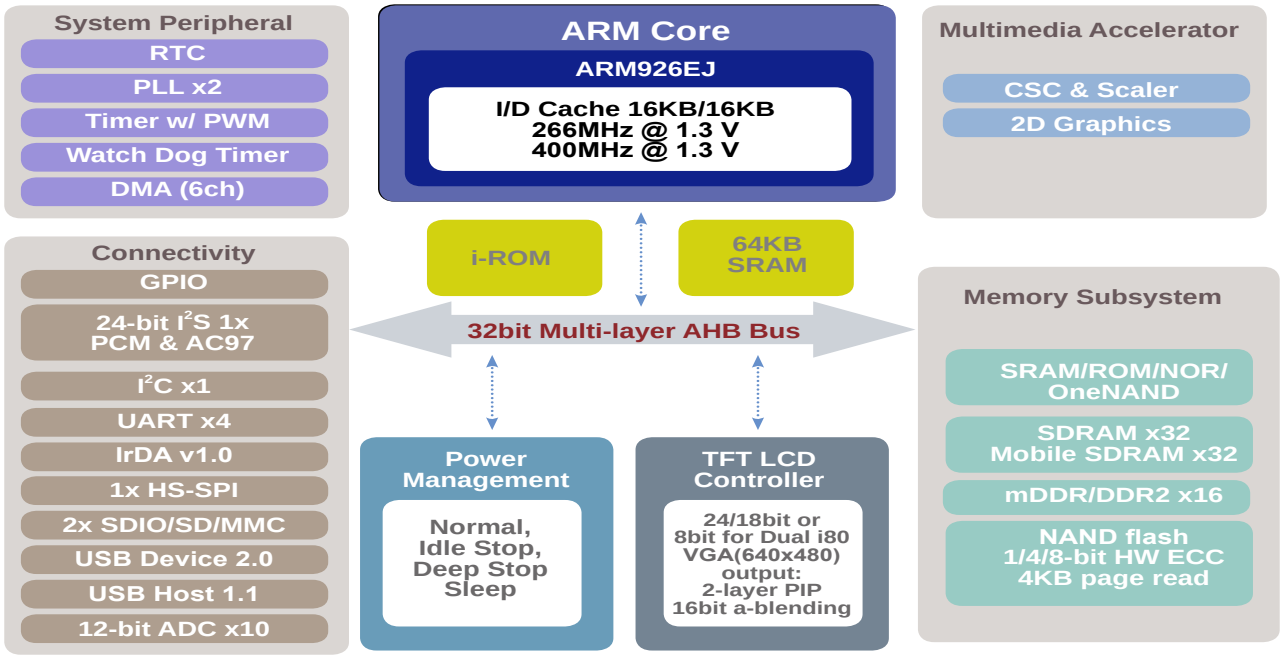


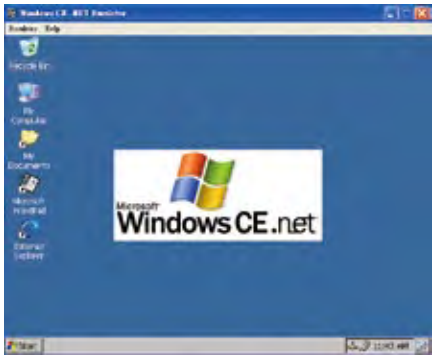

Applications

- Fleet Management System
- In-Vehicle Infotainment
- Location-Based Services
- Real-time Vehicle Diagnostic
- Emergency and Security Services

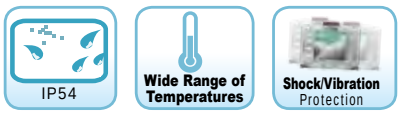
# Compact, Rugged, High Performance, and Low Power Consumption

- ARM926EJ core with built-in 2D graphics accelerator




- Pre-installed Windows® CE 6.0 R3
- Waterproof Front Panel LCD Display
- IP54 Compliant Dustproof Housing
- -20°C ~ 70°C Wide Operating Temperature
- Shock and Vibration Protection in Vehicle Environment




# Global Positioning System (GPS) Receiver

| Specifications | |
|---|---|
| Chipset | SiRF Star III, GSC3f/LPx<br>(Digital, RF in a single package) |
| Frequency | L1, 1575.42 MHz |
| Channels | 20 parallel |
| C/A Code | 1023 MHz |
| Chipset TTFF | Reacquisition: Less than 1s<br>Hot start: Less than 1s @ open sky<br>Warm start: Less than 35s @ open sky<br>Cold start: Less than 35s @ open sky |
| Accuracy | Position: Within 10m for 90%<br>Velocity: 0.1m/s |
| Interface Protocol | 1. NMEA 0183 ver 3.0, GGA, GSA, GSV, RMC, 4800bps<br>2. SiRF Protocol 57600bps, 8 data bits, no parity, 1 stop bits |
| LNA | 15dB Gain.(Typ.) LNA only enable by LPX series |
| Internal Memory | Flash type on 4MB |
| TCXO | 16.369 MHz |
| Trickle Power Mode | Duty cycle ≤ 34%. (Variable)<br>Default: Disable (Option: Enable) |

SiRF

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# GSM/GPRS Telecommunication

**VTT-1000 is equipped with a Cinterion (formerly Siemens) MC55i wireless module and built-in antenna for machine-to-machine (M2M) communication over GPRS. The MC55i is awarded full type approval and certified by global carriers and operators. It is optimized with quad-band technology for worldwide roaming.**

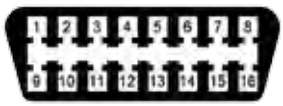
- Quad-Band GSM 850/900/1800/1900 MHz
- GPRS multi-slot class 10
- GSM phase 2/2+ compliant
- TCP/IP stack access via AT commands
- Internet Services: TCP, UDP, HTTP, FTP, SMTP, POP3
- Control via AT commands
  (Hayes 3GPP TS 27.007, TS 27.005)
- SIM Application Toolkit
- Specification for GPRS data transmission:
  - GPRS class 10: max. 86 kbps (DL)
  - Mobile station class B
  - PBCCH support
  - Coding schemes CS 1-4

# In-Vehicle Communication

- Almost all of the automobiles produced today are required by law to provide an interface for connecting the diagnostic test equipment. The VTT-1000 provides a connection to vehicle On-Board Diagnostics (OBD) port (OBD-II connector) and supports the most common data transfer protocols and standards in use today.

### Protocols and Standards

| |
|---|
| SAE J1850 PWM (41.6 kbaud) |
| SAE J1850 VPW (10.4 kbaud) |
| ISO 9141-2 (5 baud init) |
| ISO 14230-4 KWP (5 baud init) |
| ISO 14230-4 KWP (fast init) |
| ISO 15765-4 CAN (11-bit ID, 500 kbaud) |
| ISO 15765-4 CAN (29-bit ID, 500 kbaud) |
| ISO 15765-4 CAN (11-bit ID, 250 kbaud) |
| ISO 15765-4 CAN (29-bit ID, 250 kbaud) |
| SAE J1939 CAN (29-bit ID, 250* kbaud) |




**OBD-II Connector**

**VTT-1000 connector**

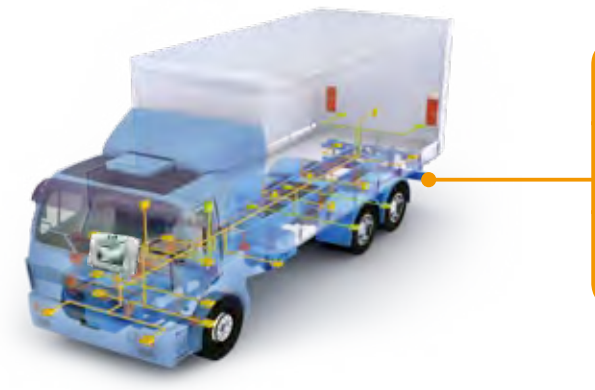
### Supported OBD-II Connector Pins

| OBD-II Pin | Description |
|---|---|
| 1 | - |
| 2 | Bus positive line of SAE-J1850 PWM and SAE-1850 VPW |
| 3 | - |
| 4 | - |
| 5 | - |
| 6 | CAN high (ISO 15765-4 and SAE-J2284) |
| 7 | K line of ISO 9141-2 and ISO 14230-4 |
| 8 | - |
| 9 | - |
| 10 | Bus negative line of SAE-J1850 PWM only (not SAE-1850 VPW) |
| 11 | - |
| 12 | - |
| 13 | - |
| 14 | CAN low (ISO 15765-4 and SAE-J2284) |
| 15 | Line of ISO 9141-2 and ISO 14230-4 |
| 16 | - |

- In addition to traditional applications for diagnostic trouble code readers and automotive scan tools, emerging applications such as Location-based Services (LBS) and Fleet Management System (FMS) have started to combine OBD with GPS and telecommunication technology, making remote real-time diagnostics available.

# Built-in Sensors and I/O

**VTT-1000 includes built-in temperature sensor, G-sensor, E-compass, and digital I/O to provide advanced vehicle monitoring and control applications. For example:**



- Alarm, light and sound supplier whichautomatically checks for unusual tags.
- An automatic emergency call will be initiated when airbag deployment is detected.
- When the G-Sensor detects a sudden brake or acceleration, system begins to log critical vehicle data, navigation data, and real-time picture or video.
- Real-time navigation and position logging.

# Software Development Kits (SDK) and Built-in Software

- In addition to Windows CE SDK, the VTT-1000 SDK contains easy to use API's for application software development
  - **Detect function key status (F1 ~ F4, and Menu1 ~ Menu3) and to program user interface applications**
  - **Digital I/O offers an easy to use 4-bit digital I/O (2 inputs/2 outputs) configuration. Allows you to set digital outputs and read digital inputs**
  - **Read temperature sensor data to monitor vehicle ambient temperature**
  - **Read G-sensor data to monitor vehicle status**
  - **Read E-compass data to log or display directions**
  - **Open OBD-II port and read OBD-II PIDs (P-codes)**

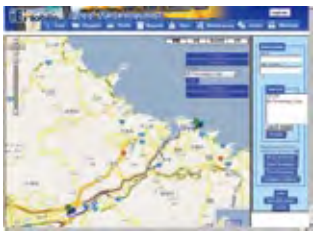
OBD-II PIDs are defined by SAE J1979. The expected response for each PID is given along with information on how to translate the response into meaningful data. Information includes:

- •Vehicle speed
- •Engine RPM
- •Total fuel used (litre since life time)
- •High resolution vehicle distance
- •Engine coolant temperature
- •Vehicle ambient temperature
- •Tachograph information
- •Total engine hours (h)
- •Fuel level (0–100 %)
- •Fuel pressure
- •Fuel system status
- •DTC (Diagnostic Trouble Code)
- •Calculated engine load
- •Intake air temperature
- •Throttle position
- •Accelerator pedal position (0–100 %)
- •Axle weight (kg)
- •Oxygen sensors and status
- •Clutch switch (on/off)
- •Brake switch (on/off)
- •Cruise control (on/off)
- •PTO (Status/Mode)

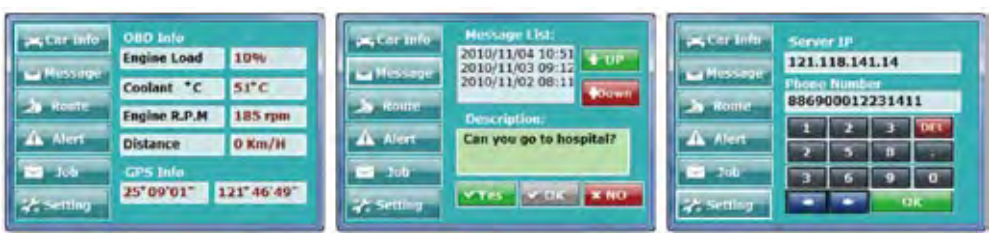
- The VTT-1000 SDK also provides free fleet management demo software, IEI FMS. This software is based on client/ server architecture. Server-side software is contained in the bundled CD and can be installed in a Windows® desktop PC. Client-side software (VTT-1000 Runtime) is pre-installed in each VTT-1000. IEI FMS demonstrates the most basic function of fleet management software with the ability to gather, store, process, monitor, report on and export information.

**IEI FMS Architecture**

■ Server-side Screen Shot



■ Client-side Screen Shot




# OEM Built-in Optional 3rd Party Navigation Software

## (May Require MOQ and NRE Depending On Project Base)

Tailoring to your specific needs, VTT-1000 supports a diverse array of popular Navigation softwares currently on the market, such as Lingtu for China.

■ **Lingtu** With map of China

# VTT-1000WiFi New

## Vehicle Tracking Terminal

- 3.5” TFT LCD touch screen
- Embedded with ARM9 400MHz CPU
- Pre-installed Windows® CE 6.0
- Built-in GSM/GPRS and Wi-Fi
- SiRF Star III 20-channel GPS receiver

ARM

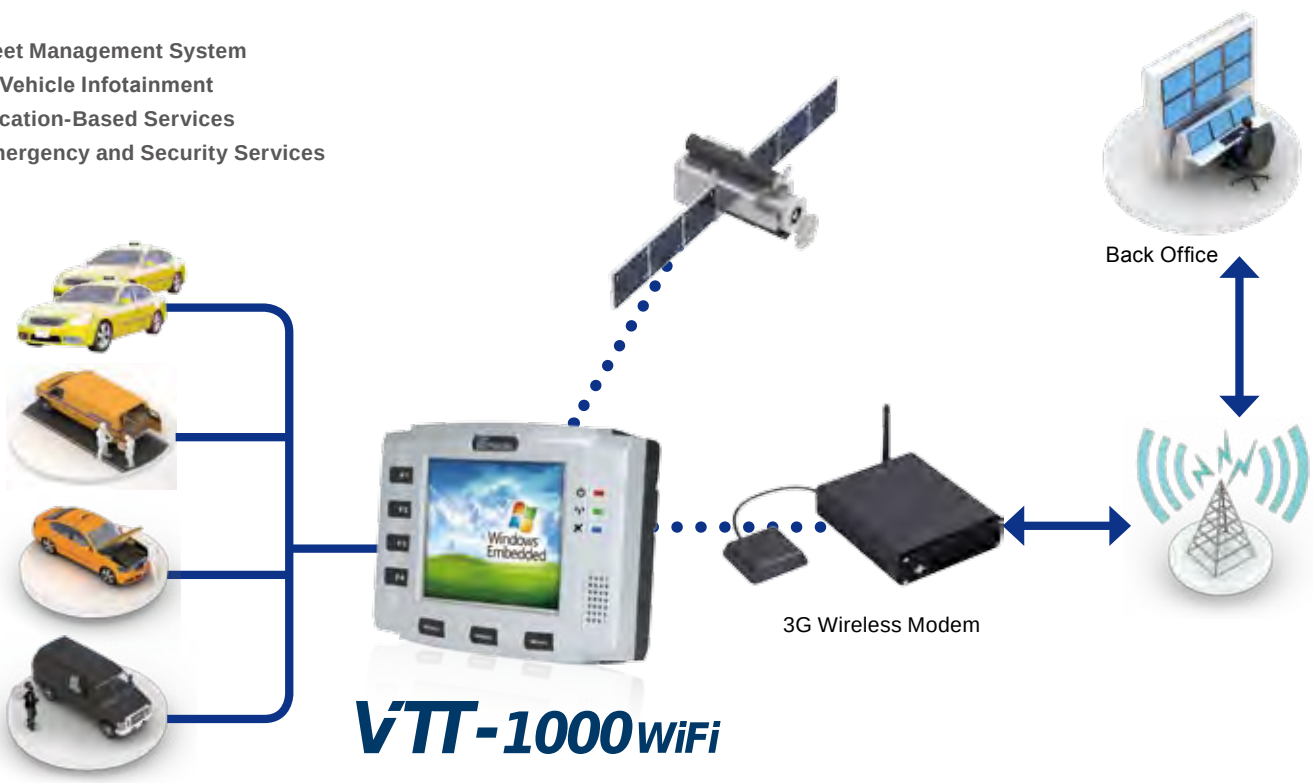
Windows CE.net

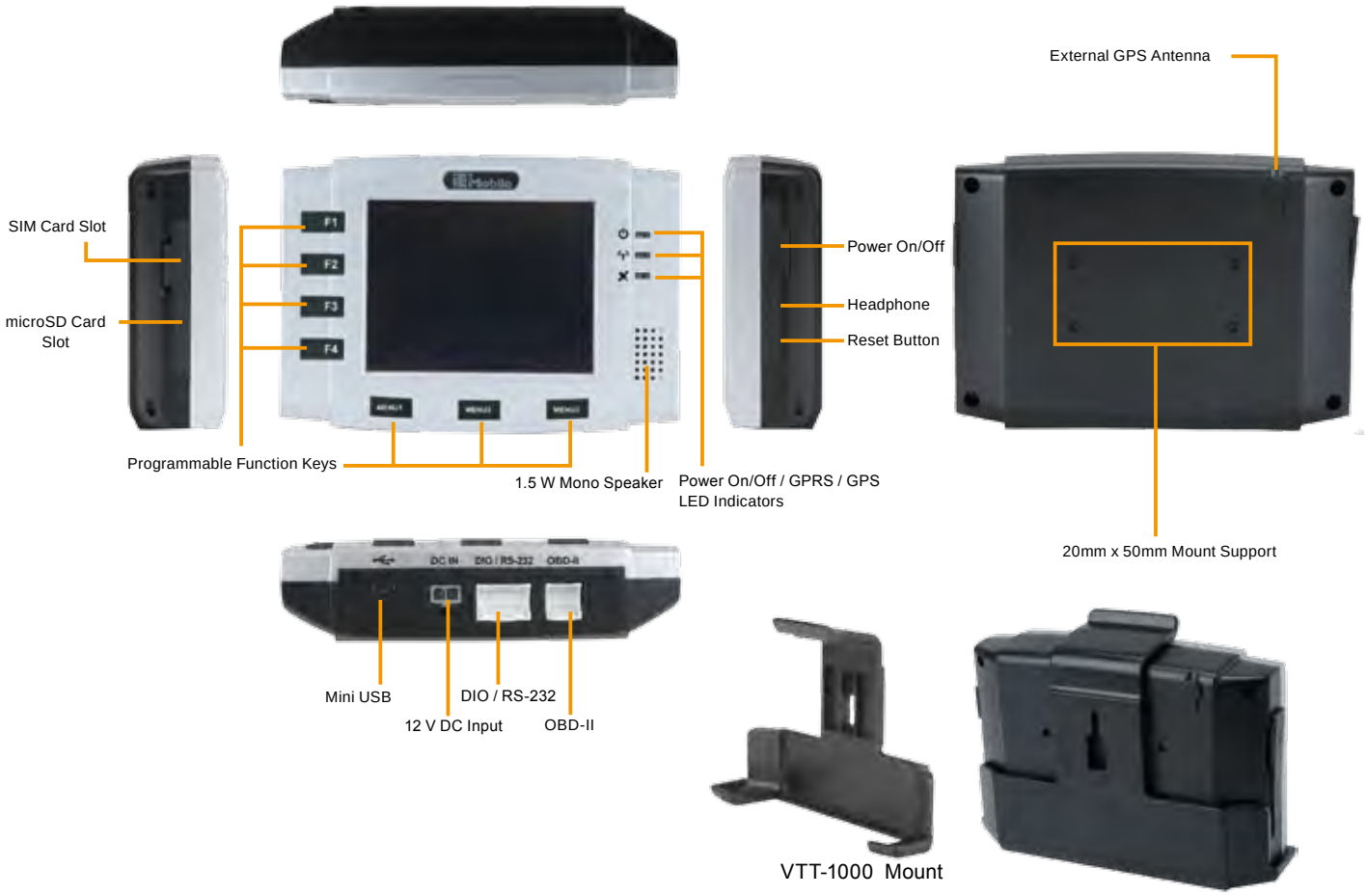
GPRS | Wi-Fi | Touch screen | GPS | microSD | Fanless

## Flexible Applications

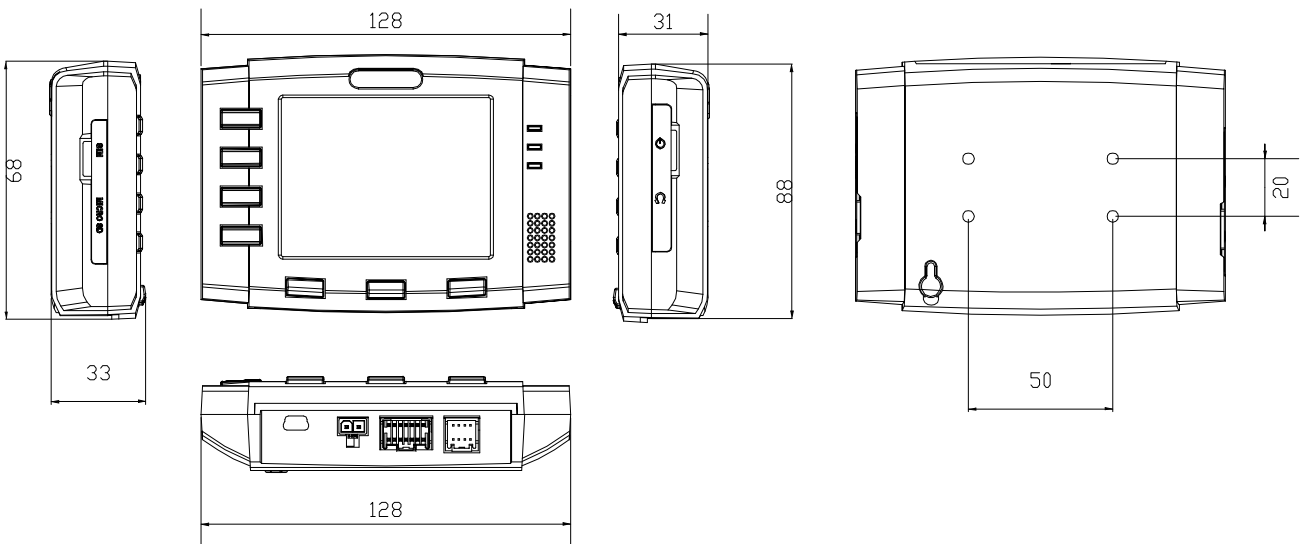
The VTT-1000-wifi serves as a vehicle terminal that provides users with highly expandable options, allowing for a wide range of fleet management applications. It features a built-in Wi-Fi antenna that can access wireless network in surroundings. Vehicles with built-in wireless modems can greatly benefit from the VTT-1000-wifi.

- Fleet Management System
- In-Vehicle Infotainment
- Location-Based Services
- Emergency and Security Services






## *Dimensions* *(Unit: mm)*





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## Specifications

| Model | | VTT-1000 | VTT-1000-WiFi |
|---|---|---|---|
| Display | LCD Size | 3.5” TFT-LCD | |
| | Brightness (cd/m²) | 450 cd/m² | |
| | Max. Resolution | 320 x 240 pixels QVGA | |
| | Viewing Angle | 50/55/60/60 Deg. | |
| | Touch Screen | 4-wire Resistive Type Touch | |
| System | CPU | Samsung S3C2416 ARM9 400 MHz | |
| | Operating System | Microsoft® Windows® CE 6.0 | |
| | Memory | 128MB DDR2 133MHz On-board | |
| | Storage | 256MB NAND FLASH<br>microSD Card Slot | |
| Communication | Modem | GSM/GPRS | |
| | GPS | GPS w/ Internal / External Antenna | |
| | Wi-Fi | N/A | 802.11 b/g |
| Multimedia | Audio | 1 x Line-out, 1 x 1.5W Speaker | |
| LED Indicators & Buttons | Indicators | Power/GPS/2.5G Status LED | |
| | Hot Keys | 7 x Programmable Keys , Power Button, Reset Button | |
| I/O Interface | USB | 1 x Mini USB 1.1 | |
| | Serial | 1 x DB-9 OBD-II, 1 x RS-232 | 1 x CAN BUS 2.0B |
| | Digital I/O | 2-bit input, 2-bit output | |
| Power | Cigarette Lighter Power | DC 9-30V | |
| Environment | Operating Temperature | -20˚C to +70˚C | |
| | Storage Temperature | -30˚C to +80˚C | |
| | Humidity | 5%~95% Non-Condensing | |
| | Drop Survival | 1M | |
| | Environmental Protection | IP 54 compliant front panel (water, dust and splash resistant) | |
| | Certifications | CE/FCC/e-MARK/ISO7637 | |
| Physical Characteristics | Dimensions (LxWxH) (mm) | 128 x 89 x 32 | |
| | Net Weight | 0.17kg | |

## Ordering Information

| Part Number | Description |
|---|---|
| VTT-1000-T35A/128MB-00-R10 | 3.5" 450cd/m² QVGA Fanless Vehicle Computer with ARM S3C2416X40-Y640 400MHz CPU, 128MB SDRAM, GSM/GPRS, OBD-II, GPS, without AC Adapter, RoHS |
| VTT-1000-WiFi-R10 | 3.5" 450cd/m² QVGA Fanless Vehicle Computer with ARM S3C2416X40-Y640 400MHz CPU, 128MB SDRAM, GSM/GPRS, Wi-Fi, CAN BUS 2.0B, GPS, without AC Adapter, RoHS |

## Model Variations

| Part No. | WiFi | Modem | GPS | OBD-II | CAN BUS 2.0 |
|---|---|---|---|---|---|
| VTT-1000-T35A/128MB-00-R10 | NA | GSM/GPRS | Yes | Yes | NA |
| VTT-1000-WiFi-R10 | Yes | GSM/GPRS | Yes | NA | Yes |

## Packing List

| Item | Part Number | Q'ty |
|---|---|---|
| DIO and RS-232 Cable | 32016-000300-100-RS | 1 |
| OBD-II Cable | 32016-000400-100-RS | 1 |
| GPS Antenna | 32502-000200-100-RS | 1 |
| Cigarette Lighter Power Cable | 32002-004600-100-RS | 1 |
| Uesr's Manual CD-ROM | 7B000-000569-RS | 1 |

## Optional Accessory List

| Item | Part Number | Description |
|---|---|---|
| Bracket | VTT-1000-MT01-R10 | VTT-1000 Mounting Kit |
| AC Adapter | IVIPOWER-2PIN-R10 | Power Adapter 63000-FSP040DGAA1107-RS + Switching Cable 32002-005000-100-RS |

GPS Antenna

OBD-II Cable

DIO and RS-232 Integrate Cable

Cigarette Lighter Power Cable

Bracket

AC Adapter

# AVL-2000PLUS

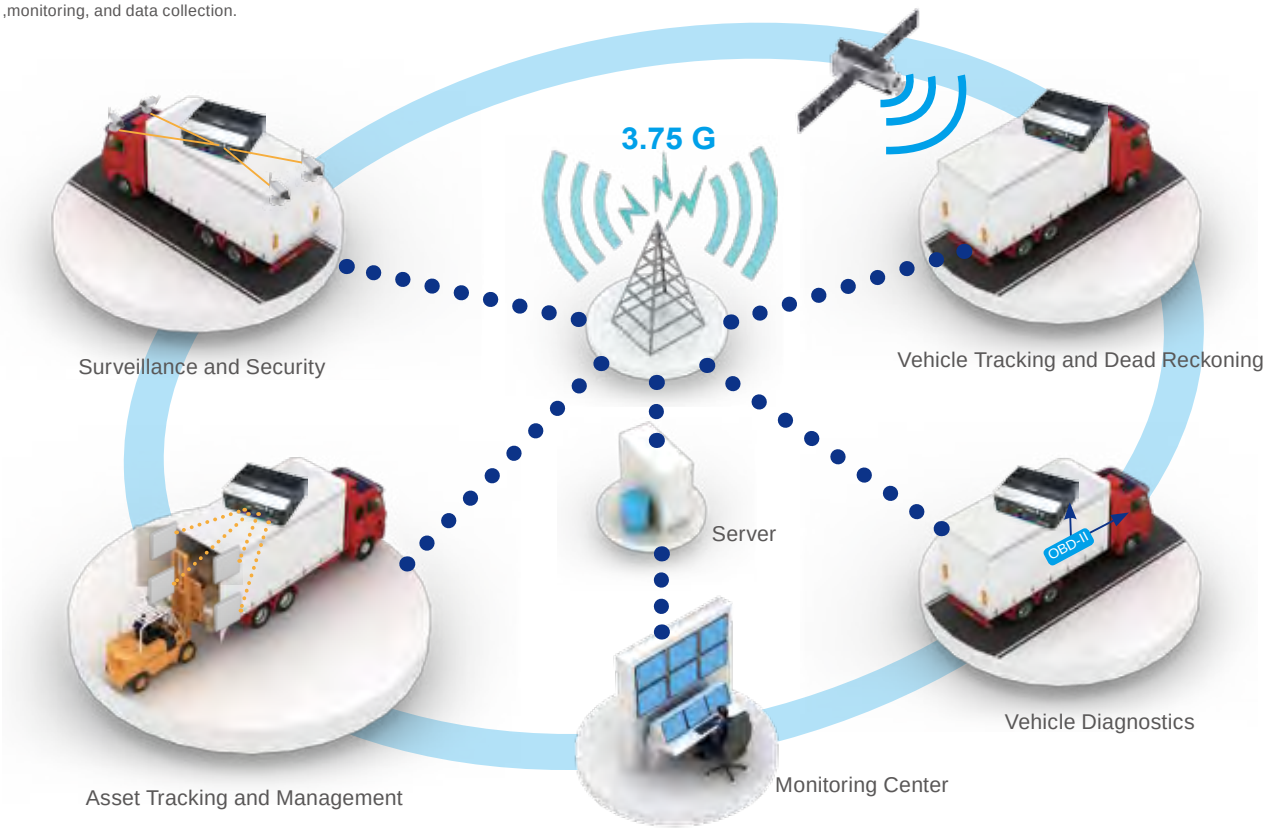
## Auto Data Server

- Intel® Atom™ Z510 1.1GHz Processor
- Pre-installed Windows® XP Embedded
- Built-in HSUPA/GPRS/GSM and Wi-Fi
- Built-in GPS with Dead Reckoning Support
- Built-in VGA Port Output and NTSC/PAL/SECAM Video Capture NTSC: 120fps@ D1
  PAL/SECAM: 100fps@ D1 for Display
- Optional UHF RFID Reader Module
- Supports On-Board Diagnostics (OBD)

3.75G/ HSUPA | Wi-Fi | GPS | Dead Reckoning | Power Management | RFID | Windows

## Advanced Vehicle Tracking/Monitoring with Auto Data Server

The AVL-2000PLUS comes integrated with a remote on-line and real time diagnostic system for vehicles via HSUPA/GPRS/GSM, Global Position System(GPS) and On-Board Diagnostic System(OBD) technologies. The compact design of the AVL-2000PLUS makes it easy to track goods or vehicles at any location and at anytime. The AVL-2000PLUS also provides video/audio capture and recording functions. Optional functions include UHF RFID Readers for a wide range of industrial and commercial applications, including supply chain management, asset tracking, authentication and access control. These complete advanced functions make an Auto Data Server suitable for accurate vehicle tracking, security ,monitoring, and data collection.





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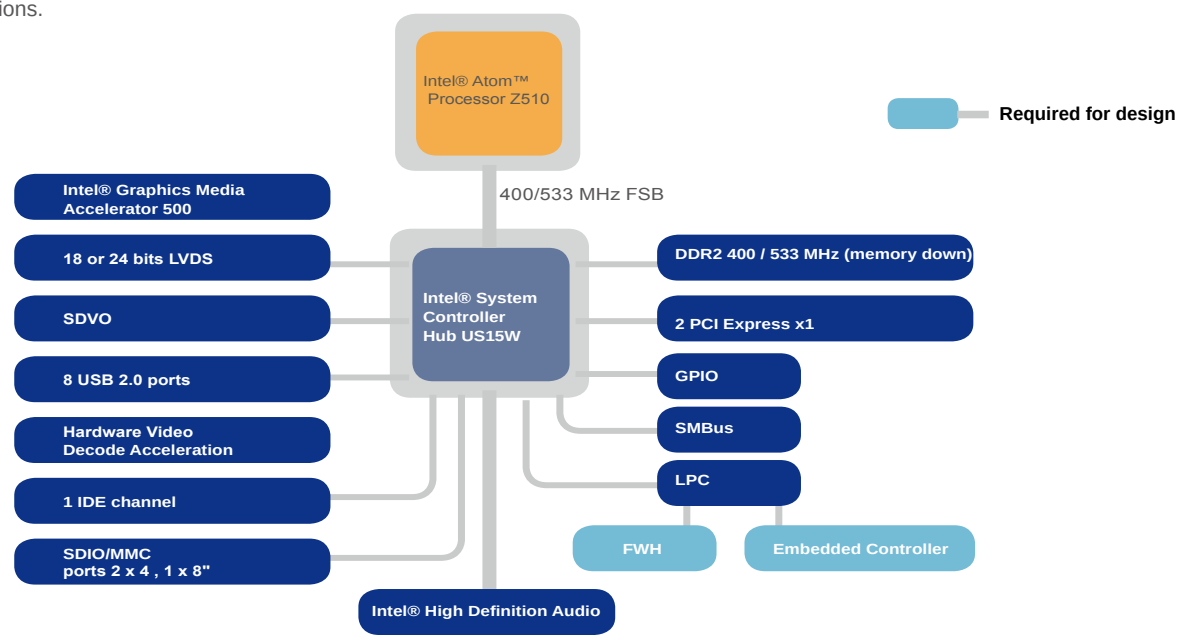
# Low Power Consumption and High Performance with Intel® Atom™ Z510 Processor

- The AVL-2000PLUS features an Intel® Atom™ Z510 processor and Intel® System Controller Hub US15WP for embedded lifecycle support. The combination of high performance, low power consumption and integrated graphics/video makes this platform well suited for many embedded market segments such as in-vehicle infotainment, industrial control and automation, diagnostics and retail transaction solutions.



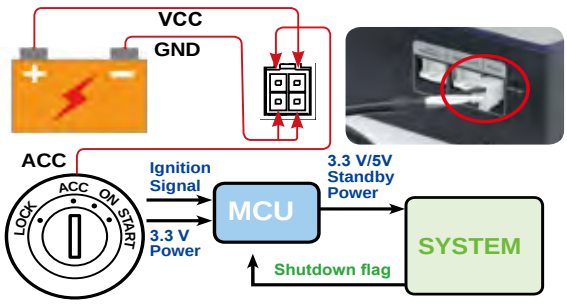

- Supporting Window® XP operating systems in a componentized form allows developers to create advanced commercial and consumer devices.

  IEIMobile supports MeeGo. MeeGo is a combined effort between Intel®, the world's largest chip manufacturer, and Nokia, the world's largest mobile handset manufacturer. It is a Linux-based open source platform designed from the ground up to provide cross-device support.

  MeeGo API is based on Qt and Qt Mobility. Qt, a well established tool for developers, allows MeeGo to offer its unique advantage of portability and expandability.

# Wide Temperature Range and Compact, Rugged Design

- -20°C ~ 70°C Operating Temperature
- Shock and vibration protection ideal in vehicle environments




# Vehicle Power Management

- The unique MCU enables system to automatically reboot or shutdown based on the adjustable delay time by detecting ACC status
- Surge protection and low power consumption hardware design

# One Key Recovery

Without having to go through complicated settings, IEI One Key Recovery uses exclusive technology to recover and backup your system with just one click.

**Recover your system from**
- Severe virus attack
- Operating system crash
- Man-made disasters

# Built-in Global Positioning System (GPS) with Dead Reckoning Support

Dead-Reckoning (DR) is a new feature implemented in some high-end automotive navigation systems in order to compensate for the limitations of GPS technology. The solution ensures uninterrupted navigation and tracking when satellite signals are blocked or unavailable, such as near tall buildings, mountains, canyons, in tunnels or in underground parking. With Dead Reckoning, the AVL-2000PLUS can still provide continuous position reporting even during GPS satellite blockage.

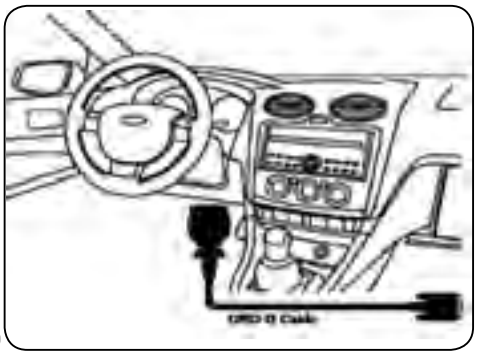
**NO GPS reception** | **Poor GPS reception** | **Good GPS reception**

Armored Money Truck

Hazardous Material Handling

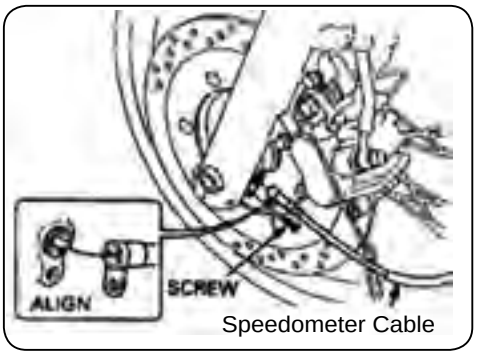
A built-in gyroscope is used to measure angular velocity. It provides highly accurate results when measuring an angular turn in any direction. The OBD-II, on the other hand, can accurately measure the speed of the vehicle. By combining gyroscopes with OBD-II, the AVL-2000PLUS is able to perform non-stop calculation of the dead reckoning position, orientation, and velocity (direction and speed of movement) of a moving object without any external references. It also eliminates the trouble and cost of a traditional speedometer cable installation. The AVL-2000PLUS is an ideal choice to enhance GPS performance and improve overall tracking ability.

AVL-2000PLUS uses standard OBD-II interface plug, allowing for quick and easy access to cruise data.



**Simple "Plug-and-Play"**

Traditional data retrieval via wired speedometer is cumbersome and time-consuming.




Speedometer Cable

**Hard to Install**

# Leading the Wireless Revolution

## WWAN 2.5G/3.5G/3.75G

- Receive the localization coordinate of each vehicle through efficient mobile connectivity.

### Technology/Bands

- HSUPA/HSPA/UMTS-800/850/900/1900/2100 MHz
- Quad-band EDGE/GPRS/GSM-850/900/1800/1900 MHz
- Dual-band EV-DO/CDMA-800/1900 MHz

## 802.11b/g Wi-Fi

- Delivers broadband-speed browsing and connectivity, compared to traditional wired LAN connections. Best for near field or ad-hoc data communications.

# Extended Connectivity

## Multi-Channel Real Time Video and Audio Capture Applications

- On-board video surveillance made easy with the AVL-2000PLUS. With multi-channel real time video and audio capture capabilities, it's designed to meet the requirements of modern security systems, especially in the transportation industry. It reduces loss and damage to goods and assets and increases the safety of the drivers. The AVL-2000PLUS SDK contains a library of four active channels video demo program, allowing for quick and easy customization of audio/video preview and capture application.

### Key Features

- Internal 4-channel video decoder and audio ADC
- High quality proprietary fast video locking system for non-real-time application
- Supports 4-channel D1 video plus 1-channel audio simultaneously with independent channel control
- Dynamic synchronization: video processing; multiple video format output support Y422, Y420, IYUI/Y411, Y41P, RGB555 and RGB565
- Dual support for Direct Show and Direct Draw
- Accepts all NTSC(M/N/4.43) / PAL(B/D/G/H/I/ K/L/M/N/60) / SECAM standards with auto detection

# PC-Style Peripherals

- 3-in-1 RS-232/422/485 serial interface

The AVL-2000PLUS is a ideal choice for connecting RS-232/422/485 serial devices to an Ethernet network, making it possible for software to access serial devices anywhere on a local network.

- Full speed USB 2.0 host

Supports connection to USB devices such as standard HIDs (Human Interface Device) like keyboard and mouse, USB storage, USB card reader, or proprietary USB devices.

- 10/100/1000 Mbps Ethernet LAN

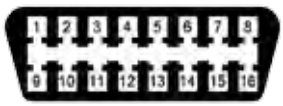
Wherever Ethernet LAN is available, the AVL-2000PLUS LAN port provides another faster and more efficient networking option.

# In-Vehicle Communication

●Almost all of the automobiles produced today are required by law to provide an interface for the connection of diagnostic test equipment. The AVL-2000PLUS provides a connection to the vehicle's On-Board Diagnostics (OBD) port (OBD-II connector), and supports several popular data transfer protocols and standards.

### Protocols and Standards

| |
|---|
| SAE J1850 PWM (41.6 kbaud) |
| SAE J1850 VPW (10.4 kbaud) |
| ISO 9141-2 (5 baud init) |
| ISO 14230-4 KWP (5 baud init) |
| ISO 14230-4 KWP (fast init) |
| ISO 15765-4 CAN (11-bit ID,500 kbaud) |
| ISO 15765-4 CAN (29-bit ID,500 kbaud) |
| ISO 15765-4 CAN (11-bit ID,250 kbaud) |
| ISO 15765-4 CAN (29-bit ID,250 kbaud) |
| SAE J1939 CAN (29-bit ID,250* kbaud) |




OBD-II Connector

AVL-2000PLUS Connector

### Supported OBD-II Connector Pins

| OBD-II Pin | Description |
|---|---|
| 1 | - |
| 2 | Bus positive Line of SAE-J1850 PWM and SAE-1850 VPW |
| 3 | - |
| 4 | - |
| 5 | - |
| 6 | CAN high (ISO 15765-4 and SAE-J2284) |
| 7 | K line of ISO 9141-2 and ISO 14230-4 |
| 8 | - |
| 9 | - |
| 10 | Bus negative Line of SAE-J1850 PWM only (not SAE-1850 VPW) |
| 11 | - |
| 12 | - |
| 13 | - |
| 14 | CAN low (ISO 15765-4 and SAE-J2284) |
| 15 | L line of ISO 9141-2 and ISO 14230-4 |
| 16 | - |

●Besides traditional applications for diagnostic trouble code readers and automotive scan tools, emerging applications like Location-Based Services (LBS) and Fleet Management Systems (FMS) adopt OBD combined with GPS and telecommunication to realize remote real-time diagnostics.

# Built-in Sensors and I/O

## ■ The AVL-2000PLUS has digital I/O to provide advanced vehicle monitoring and control applications. For example:

●Alarm, light and sound supplier which automatically checks for unusual tags.

●Sends security calls automatically when an unusual door-open is detected.

●An automatic emergency call will be initiated when an airbag deployment is detected.

## ■ Optional UHF RFID readers with antenna support

●The AVL-2000PLUS extends the benefits of 4-channel UHF RFID technology to in-vehicle applications via the long range UHF RFID readers which are ISO 18000-6C standard complaint and suitable for industrial warehouse management. It can be used in any harsh environment or temperature. It also supports error-free read performance in vehicles. The non line-of-sight tag reading is effectively used in item level identification, warehouse logistics, and security access management. The AVL-2000PLUS SDK contains libraries to read, write, lock and kill RFID tags, which can be easily integrated into software applications.

**Key Features :**

- High Gain, high performance
- Easy installation
- UV resistance
- IP65 waterproof and dustproof
- Pole mount & wall mount available

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# Software Development Kits (SDK) and Built-in Software

## IEI AVL-2000PLUS SDK

**Allows third-parties to develop software to send requests to the protocol firmware to acquire vehicle data**

**●Detects function key status (F1~F3) to program user interface application**

**●Implements digital I/O**

Offers an easy-to-use 8-bit digital I/O (4 inputs/4 outputs) configuration. Allows you to set digital outputs and read digital inputs.

**●Multi-channel video capture card provides:**

Four active channels video settings
Captured video preview
Frame rate information
Image property settings
Fast configuration and ready-to-run
Complete source code

●Channel Video Capture Card

●Implement Digital I/O

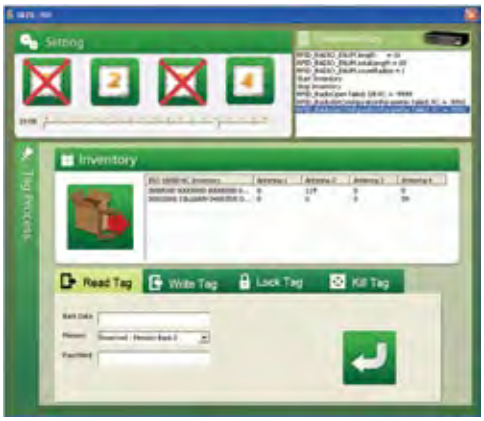
**●UHF module provides:**

A selection of 4 active antennas.
Antenna in use identification
Interface to read/write/lock/kill tag and retrieve product information such as product names, inventory, place of production, specification and read count information.

**●OBD-II provides:**

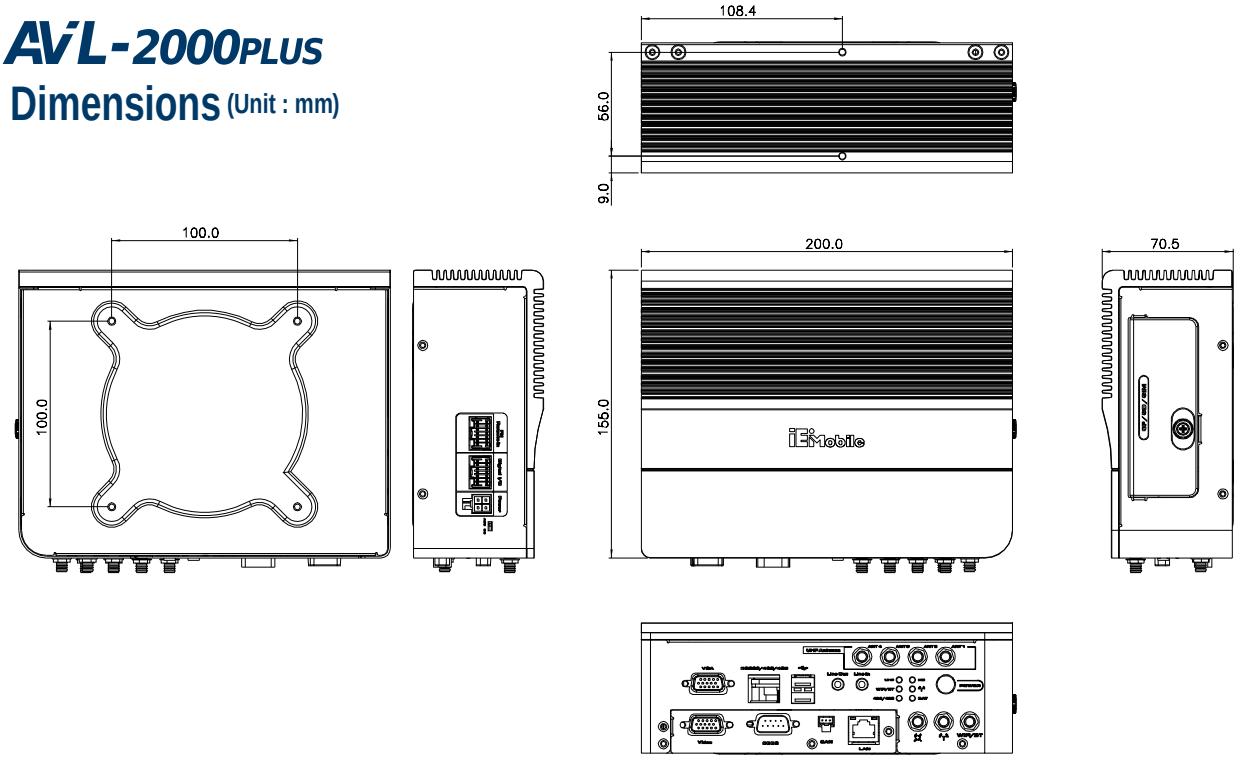
Demo the query results of OBD-II interface with CAN protocol data. There are 4 types of CAN data supported. Also features an interface for users to acquire diagnostic vehicle data and over 79 kinds of vehicle for diagnostic or travel information such as speed, engine loading, engine R.P.M and more.

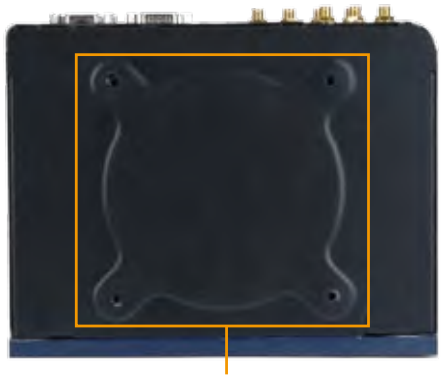
●Data provided by OBD-II



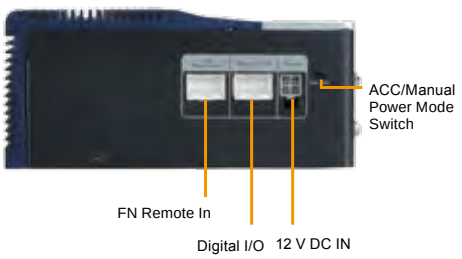

●UHF Module

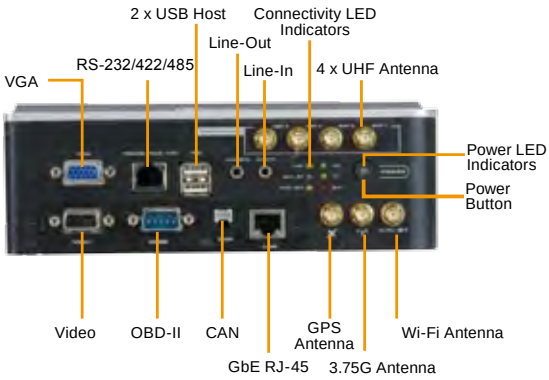
## AVL-2000PLUS Dimensions (Unit : mm)

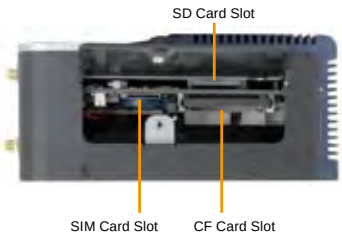




Easy Access to CF, SD and SIM




## *Specifications*

| Model | AVL-2000PLUS | |
|---|---|---|
| System | CPU | Intel® Atom™ Z510 1.1 GHz |
| | Chipset | Intel® US15WP |
| | Operating System | Microsoft® Windows® XP Embedded |
| | Memory | 1 GB DDR2 533 MHz On-board |
| | Storage | 4GB CompactFlash®<br>SD Card Slot |
| Communication | Wireless LAN | Wi-Fi 802.11b/g/n |
| | Bluetooth | N/A |
| | Modem | WCDMA/HSUPA |
| | GPS | GPS |
| Multimedia | Audio | 1 x Line-in<br>1 x Line-out |
| Data Collection | RFID | Read-Write Capable<br>ISO18000-6C UHF module (option) |
| | Video Capturing | Video Input: 4 channels composite video(NTSC/PAL/SECAM)<br>Frame rate: 4 channels with 120fps@D1 per channel(NTSC), 4 channels with 100fps@D1 per channel(PAL/SECAM) |
| LED Indicators & Buttons | Indicators | UHF/Wi-Fi/ RS-422/485/HDD/3.75G/BAT/Power Status LED |
| | Buttons | Power Button |
| I/O Interface | USB | 2 x USB 2.0 |
| | Serial | 1 x DB-9 OBD-II<br>1 x RJ-45 RS-232/422/485 |
| | LAN | 1 x 10/100/1000 Mbps GbE RJ-45 |
| | VGA | 1 x VGA |
| | CAN | 1 x CAN 2.0b |
| | Digital I/O | 4 Inputs / 4 Outputs |
| Power | Cigarette Lighter Power | Cigarette Lighter Power Cable DC 9~30V |
| | ACC Power | Manual power mode and ignition detection supported ACC power on/off mode with software configurable delay time |
| Environment | Operating Temperature | -20˚C to +70˚C |
| | Storage Temperature | -30˚C to +80˚C |
| | Humidity | 5%~95% non-condensing |
| | Certification | CE/FCC/e-Mark/ISO7637 |
| Physical Characteristics | Dimensions (LxWxH) (mm) | 200 x 155 x 70 |
| | Net Weight | 1.9kg |





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## Ordering Information

| Part Number | Description |
|---|---|
| AVL-2000P-510/HU-R11 | Vehicle PC Box with Intel® Atom™ Z510 1.1GHz CPU, 1GB SDRAM, 802.11 b/g/n Wireless, HSUPA, 4CH 120 FPS Video Capture, OBD-II, GPS with DR, RoHS |
| AVL-2000P-510/HU/FCC-R11 | Vehicle PC Box with Intel® Atom™ Z510 1.1GHz CPU, 1GB SDRAM, 802.11 b/g/n Wireless, HSUPA, 4CH 120 FPS Video Capture, OBD-II, GPS with DR, UHF FCC, RoHS |
| AVL-2000P-510/HU/ESTI-R11 | Vehicle PC Box with Intel® Atom™ Z510 1.1GHz CPU, 1GB SDRAM, 802.11 b/g/n Wireless, HSUPA, 4CH 120 FPS Video Capture, OBD-II, GPS with DR, UHF ETSI, RoHS |

## Support Function

| Part Number | Wireless | Video Capture | GPS | 3.75G | UHF RFID |
|---|---|---|---|---|---|
| AVL-2000P-510/HU-R11 | 802.11 b/g/n | 4CH 120 FPS | U-blox | Qualcomm | None |
| AVL-2000P-510/HU-R11/FCC | 802.11 b/g/n | 4CH 120 FPS | U-blox | Qualcomm | UHF FCC |
| AVL-2000P-510/HU-R11/ETSI | 802.11 b/g/n | 4CH 120 FPS | U-blox | Qualcomm | UHF ETSI |

## Packing List

| Item | Part Number | Q'ty |
|---|---|---|
| Cigarette Lighter Power Cable | 32002-001800-100-RS | 1 |
| ACC Power Cable | 32002-001900-100-RS | 1 |
| RS-232 Cable | 32005-000200-200-RS | 1 |
| Capture Cable | 32007-001400-100-RS | 1 |
| OBD-II Cable | 32025-000300-100-RS | 1 |
| J1939 Cable | 32025-000400-100-RS | 1 |
| Wi-Fi/BT Antenna | 32505-000400-100-RS | 1 |
| GPS / 3.75G Integrate Antenna | 32506-000100-100-RS | 1 |
| User Manual CD-ROM | 7B000-000568-RS | 1 |
| IEI One Key Recovery CD | IEI-7B000-000478-RS | 1 |

ACC Power Cable

Capture Cable

J1939 Cable

OBD-II Cable

Cigarette Lighter Power Cable

GPS / 3.75G Integrate Antenna

RS-232 Cable

Wi-Fi Antenna

Power Adapter

UHF RFID Cable

UHF RFID Antenna

## Optional Accessory List

| Item | Part Number | Description |
|---|---|---|
| UHF RFID Antenna w/Cable | AVL-2000PLUS-FCC01-R10 | PATCH Antenna 915MHz |
| | | RFID Cable 10000MM |
| | AVL-2000PLUS-ETSI01-R10 | PATCH Antenna 867.5MHz |
| | | RFID CABLE 10000MM |
| Power Adapter | IVIPOWER-4PIN-R10 | PPOWER ADAPTER; 63000-FSP040DGAA1107-RS + Switching Cable 32002-005100-100-RS |

# AVL-3000

## Advanced Auto Data Server

- Intel® Atom™ N2600 1.6GHz CPU
- Powered by Windows® Embedded Standard 7 E (WES7E)
- Built-in 2.5” 16 GB SATA SSD
- Built-in Wi-Fi, Bluetooth, HSUPA, and GPS
- Built-in VGA Output and NTSC/PAL/SECAM Video Capture with Software Compression Support
- Supports On-Board Diagnostics (OBD)
- Optional UHF RFID reader module

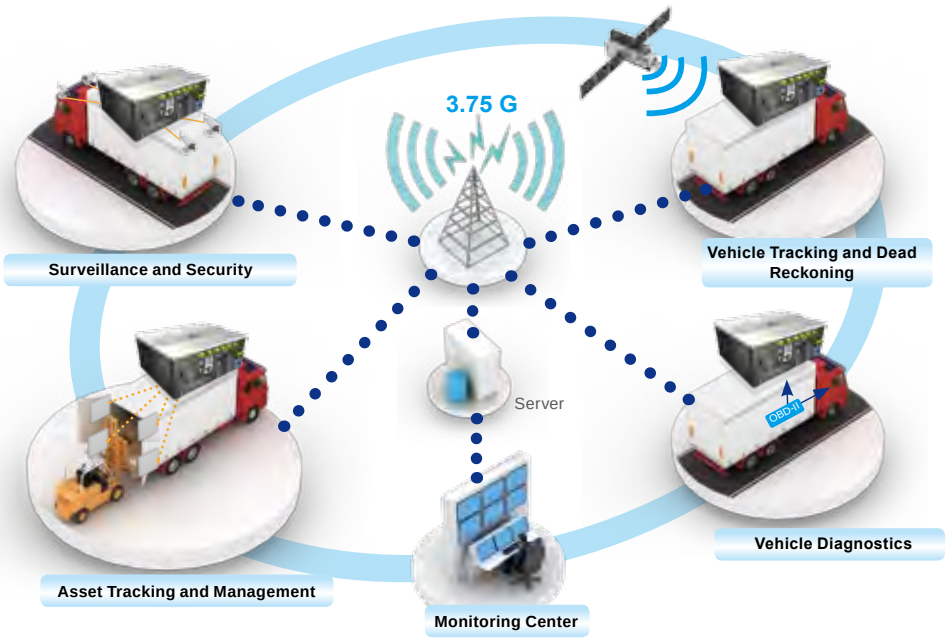
3.75G/ HSUPA | Bluetooth | Wi-Fi | Power Management | Video Capture | UHF | GPS

## Advanced Auto Data Server with Upgraded Tracking and Surveillance Function

The AVL-3000 comes integrated with a remote on-line and real time diagnostic system for vehicles via HSUPA/GPRS/GSM, Global Position System (GPS) and On-Board Diagnostics System (OBD) technologies.

The AVL-3000 provides video/audio capture and recording functions. With the codec solution, the AVL-3000 offers enhanced data streaming performance. Optional functions include UHF RFID Readers for a wide range of industrial and commercial applications, including supply chain management, asset tracking, authentication and access control. These complete advanced functions make an Auto Data Server suitable for accurate vehicle tracking, security ,monitoring, and data collection.

| | AVL-2000 | AVL-3000 |
|---|---|---|
| CPU | eMenlow | Cedarview |
| | Z510 1.1 GHz | N2800 (optional) N2600 |
| OS | Windows® XP Embedded | Windows® 7 Embedded |
| Memory | DDR2 533MHz (2 GB max.) | DDR3 1066MHz |





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# 2012 New Atom™ Dual Core Platform

## Benefit

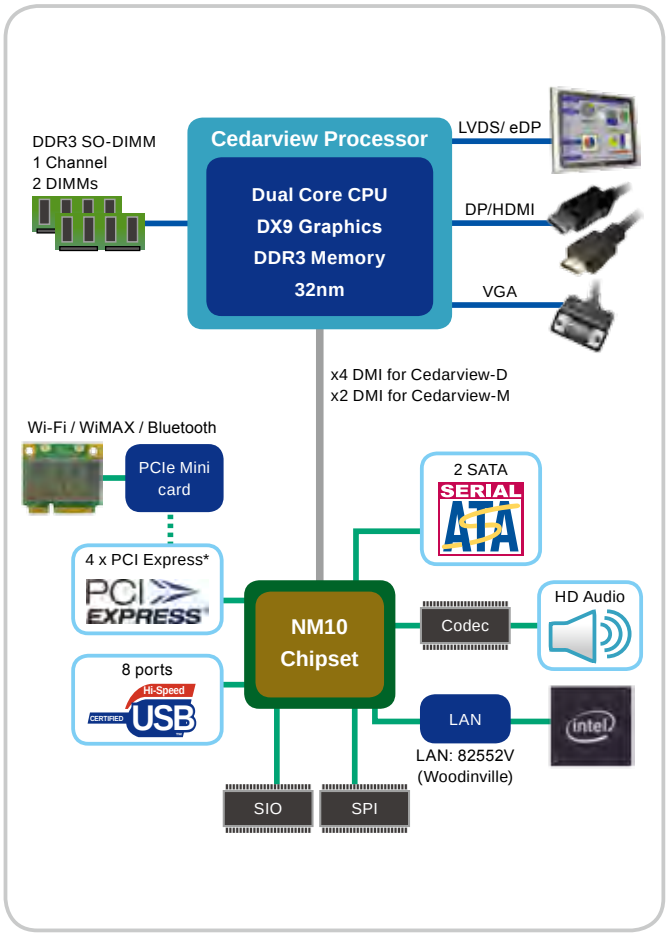
- CPU TDP (3.5/6.5/10W) and average power are lower than Pine Trail (6.5/10/13W)
- Display options including 2 digital ports supprot for extra LVDS/ HDMI/VGA options
- 2 times improved graphics with 2 HD video support
- Faster memory up to DDR3 1066MHz
- HD decoding with Blu-ray support

### Specifications Comparison

| | Navy Pier (N270) | Pine Trail (D525/D425/N455) | Cedar Trail (N2800/N2600) |
|---|---|---|---|
| **Process** | 45nm | 45nm | 32nm |
| **Processor Frequency** | N270: 1.6GHz | D525/D524: 1.8GHz<br>N455: 1.66GHz | N2800: 1.86GHz<br>N2600: 1.6GHz |
| **CPU TDP** | N270: 2.5W | D525: 13W<br>D425: 10W<br>N455: 6.5W | N2800: 6.5W<br>N2600: 3.5W |
| **Chipset/ PCH TDP** | 945GSE: 5.5W<br>ICH7M: 1.9W | ICH8M: 2W | Intel® NM10: 1.5W |
| **Memory** | DDR2 400/533MHz (2GB max.) | DDR2/DDR3 up to 667 for N455 800MHz for D525/D425 (4GB max.) | DDR3 1066MHz for N2800 (4GB max.)<br>DDR3 800MHz for N2600 (2GB max.) |
| **Graphics** | DX9, OGL 1.4 | DX9, OGL 1.5 | DX9, OGL 3.0 |
| | Gfx @ 133 MHz | Gfx @ 200 MHz (N455)<br>Gfx @ 400 MHz (D525/D425) | Gfx @ 400 MHz (N2600)<br>Gfx @ 640 MHz (N2800) |
| **Video Decode** | MPEG2 | Discrete 3rd part decoder | MPEG2, H.264, VC-1/ WMV9<br>Up to 1080p decoding |

Note: Standard product is N2600, By customization can upgrade to N2800.

## Block Diagram




## Microsoft® Windows® Embedded Standard 7

| Benefit Category | Top Features |
|---|---|
| **Performance/ Reliability** | • 64/32 bit support<br>• Less boot time<br>• Improved power management<br>• Aero glass |
| **Compatibility/ Security** | • Enhanced driver compatibility<br>• Enhanced application compatibility<br>• Credential manager<br>(allows you to maintain all your credentials related to websites or when you connect to another computer) |
| **Connectivity** | • Sensor and location platform<br>• Bluetooth 2.1+EDR and Extended Inquiry Response (EIR)<br>(Windows® XP only supports Bluetooth 2.0+EDR; EIR is not supported by Windows® Vista) |
| **Development/Deployment/ Serving** | • Simplified installation (2 tools vs. 4 tools compared with previous versions of wes/xpe); installation wizard (ibw) is also available.<br>• Supports imagex/dism for easier recovery and service solutions<br>• Supports Windows® update |

# Extended Connectivity

## Multi-Channel Real Time Video and Audio Capture Applications

The AVL-3000, featuring multi-channel real time video and audio capture capabilities, is desinged to meet the requirements of modern security systems in the transportation industry. It can reduce loss and damage to goods and assets while increasing the safety of drivers at the same time. The AVL-3000 SDK contains a library of four active channels video demo program, allowing for quick and easy customization of audio/video preview and capture application.

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- Dynamic synchronization: video processing; multiple video format output support Y422, Y420, IYUI/Y411, Y41P, RGB555 and RGB565
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# UHF RFID Readers

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**Key Features :**

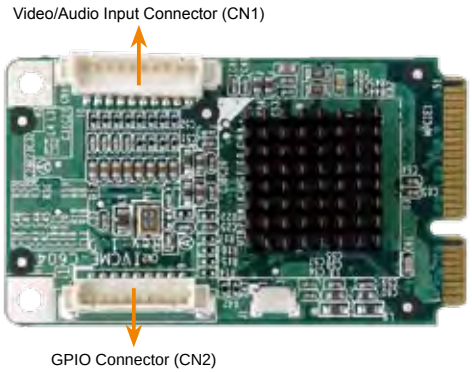
- High Gain, high performance
- Easy installation
- UV resistance
- IP 65 waterproof and dustproof
- Pole mount & wall mount available

# Optional Advanced Video Processing

## Software Compression

The AVL-3000 utilizes a software compression card to capture, compress, and save audio/video information. This quality software compression card ensures the smooth processing of video/audio information during advanced video capturing applications.

| Video processing | |
|---|---|
| Video compression | Software compression |
| Video engine | 1 x Conexant CX25854 |
| Frame rate | NTSC: Total 120fps @ D1 for 4 channels (30fps per channel) |
| | PAL: Total 100fps @ D1 for 4 channels |
| Resolution | 320 x 240 |
| **Audio processing** | |
| Audio compression | Software compression |
| Sampling rate | 8kHz, 16kHz, 32kHz, 44.1kHz and 48kHz |
| Quantization | 16-bit |





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# Rich Wireless Communication

## Built-in Global Positioning System (GPS)

The built-in GPS allow drivers to perform real-time navigation and access Location Based Services (LBS) while on the road. On the other hand, this information can be transmitted through 3G wireless, which enables the management center to track their vehicles on the road.

### ● 802.11 b/g/n Wi-Fi

Delivers broadband-speed browsing and connectivity, compared to traditional wired LAN connections. Best for near field or ad-hoc data communications.

### ● Leading the Wireless Revolution

**WWAN 2.5G/3.5G/3.75G**

Receives the localization coordinate of each vehicle through efficient mobile connectivity.

**Technology/Bands**

- HSUPA/HSPA/UMTS-800/850/900/1900/2100 MHz
- Quad-band EDGE/GPRS/GSM-850/900/1800/1900 MHz
- Dual-band EV-DO/CDMA-800/1900 MHz

## Solid and Expansion Storage

The AVL-3000 uses a 16 GB 2.5" SATA SSD for storage. This design has 2 benefits:

- It allows more information to be stored. This is a great significance for vehicle surveillance applications as video/audio information requires large storage space.
- It is more durable and is hardly to be damaged by vibrations and tough vehicle environment.

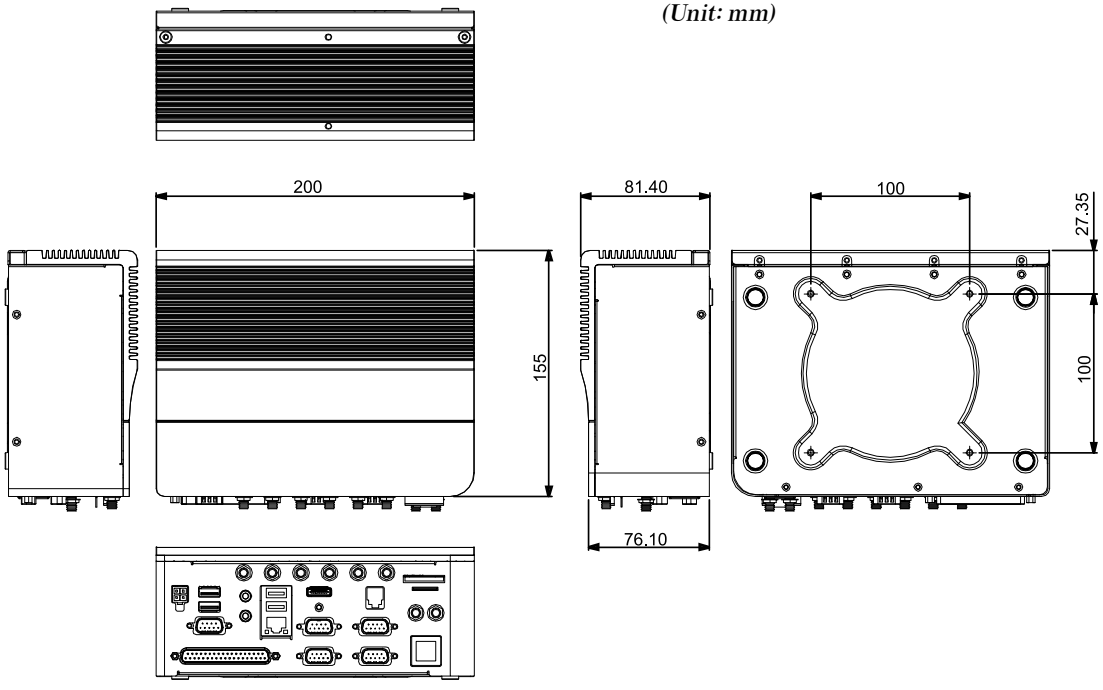
### SSD vs HDD

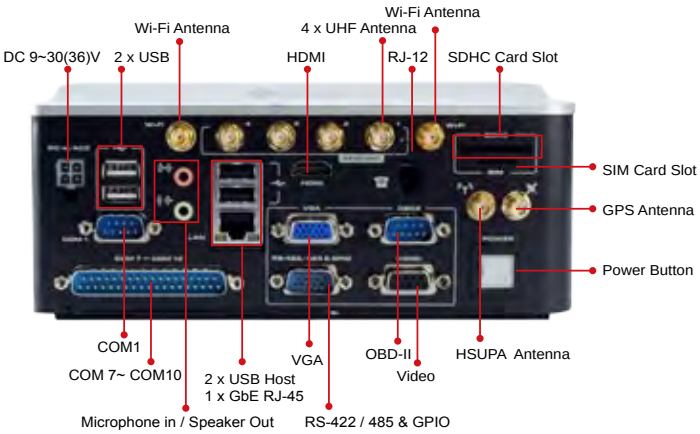
SSD is more suitable for IVI solutions as it can pass the tests of operating shock and vibration.

| | HDD | SDD |
|---|---|---|
| Life Expectancy | ●●● | ●●●●● |
| Operating Temperature | ●●● | ●●●●● |
| Storage Temperature | ●●●● | ●●●●● |
| Operating Shock | ● | ●●●●● |
| Operating Vibration | ● | ●●●●● |
| Humidity | ●●●● | ●●●●● |
| Altitude | ●●● | ●●●●● |
| Power Read/Write | ●●● | ●●●● |
| Capacity | ●●●●● | ●●●● |

### *Dimensions*

*(Unit: mm)*






## Specifications

| Model | | AVL-3000 |
|---|---|---|
| System | CPU | Intel® Atom™ processor N2600 1.6Ghz |
| | Chipset | Intel® NM10 |
| | Operating System | Windows® Embedded Standard 7 E (WES7E) |
| | Memory | 2GB 800 MHz DDR3 |
| | Storagy | 1 x Built-in 16G 2.5" SATA SSD |
| | | 1 x SDXC Slot for data storage |
| Communication | Wireless LAN | 802.11b/g/n |
| | Bluetooth | Bluetooth V2.0+EDR (class I) |
| | 3.75G | HSUPA/UMTS-800/850/900/1900/2100 MHz |
| | | Quad-band EDGE/GPRS |
| | | GSM-850/900/1800/1900 MHz |
| | | Dual-band EV-DO/CDMA |
| | GPS | GPS |
| Data Collection | RFID | Read-Write Capable<br>ISO18000-6C UHF module<br>ETSI/FCC |
| Multimedia | Audio | 1 x MIC IN<br>1 x Line-out |
| | Camera | 4 x Channel camera D1 120FPS |
| | SW Compression | 1 x Software Compression Card (option) |
| LED Indicator | | 1 x Power LED |
| Power | Power Input | Cigarette lighter power cable<br>DC 9~30(36)V |
| | Vehicle Power | ACC Power Cable |
| I/O Interface | | 4 x USB |
| | | 1 x OBD-II |
| | | 6 x COM port: DB-9 (COM1),<br>RS-422/485 (COM4, 4-PIN),<br>DB-37 (COM7~COM10) |
| | | 1 x GIGA LAN |
| | | 1 x VGA support up to 1920 x 1200 |
| | | 4 x VIDEO IN |
| | | 1 x 8 bit Digital I/O (selectable by software)<br>4 x DI<br>4 x DO |
| | | 1 x Line in |
| | | 1 x Line out |
| | | 1 X RJ11 3.5G Voice |
| | | 1 x HDMI |
| Environment | Operating Temperature | -20°C~70°C |
| | Storage Temperature | -30°C ~80°C |
| | Humidity | 5%~95% non-condensing |
| | Drop Survival | ISO 16754 |
| | Certification | CE/FCC/e-Mark |
| Physical Characteristics | Dimensions (LxWxH) (mm) | 200 x 150 x 76 |
| | Weight | 2kg |

## Ordering Information

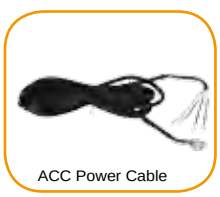
| Part No. | Description |
|---|---|
| AVL-3000-N26-SC-R10 | Vehicle PC Box with Intel® Atom™ N2600 1.6GHz CPU, WES7E OS, 2GB SDRAM, 16GB 2.5" SSD, 802.11 b/g/n Wireless, HSUPA, 4CH 120 FPS Video Capture, OBD-II, GPS, Software Compression, RoHS |
| AVL-3000-N26-R10 | Vehicle PC Box with Intel® Atom™ N2600 1.6GHz CPU, WES7E OS, 2GB SDRAM, 16GB 2.5" SSD, 802.11 b/g/n Wireless, HSUPA, OBD-II, GPS, RoHS |

## Packing List

| Item | Part Number | Quantity |
|---|---|---|
| GPS/3.75G Integrate Antenna | 32506-000100-100-RS | 1 |
| Wi-Fi Antenna | 32505-000400-100-RS | 2 |
| ACC Power Cable | 32002-001900-100-RS | 1 |

## Optional Accessory List

| Item | Part Number |
|---|---|
| Cigarette Lighter Power Cable | 32002-001800-100-RS |
| RS-232 Cable | 32005-000200-200-RS |
| Capture Cable | 32007-001400-100-RS |
| OBD-II Cable | 32025-000300-100-RS |
| J1939 Cable | 32025-000400-100-RS |
| User Manual CD-ROM | 7B000-000568-RS |
| IEI One Key Recovery CD | IEI-7B000-000478-RS |
| UHF RFID Antenna w/Cable (PATCH Antenna 915MHZ) | AVL-2000PLUS-FCC01-R10 |
| UHF RFID Antenna w/Cable (PATCH Antenna 867.5MHZ) | AVL-2000PLUS-ETSI01-R10 |
| Power Adapter | IVIPOWER-4PIN-R10 |


ACC Power Cable

J1939 Cable

Cigarette Lighter Power Cable

RS-232 Cable

Power Adapter

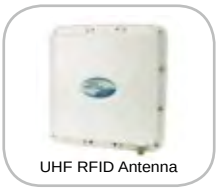
Capture Cable

OBD-II Cable

GPS / 3.75G Integrate Antenna

Wi-Fi Antenna

UHF RFID Cable


UHF RFID Antenna





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Stand März 2013

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